TANDBERG
EDUCATOR²

Installation & Configuration Manual

Software Version B4
Control Software V4.1

D50103-06
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1 Introduction

Welcome to the TANDBERG Educator².

Educator² is a fully featured distance learning system. The heart of this system is a color touch panel incorporating single screen operation and a video window that displays current local and remote site transmission. Educator² allows control of multiple devices, such as room cameras, VCR's, DVD players, document cameras.

Figure 1 Educator² Panel

Manual Content

This manual is designed to assist you in the installation and configuration of the TANDBERG Educator². It assumes that users have a fundamental knowledge of the system.

This manual is arranged in the order in which an Educator² user will need the information.

Conventions

Push button controls are fitted into the cover plate surrounding the touch-sensitive area of the control screen (touch panel). Push button controls are **DEPICTED LIKE THIS**.

Touch panel buttons are **depicted like this**.

Hardware outlets, ports and elements are DEPICTED LIKE THIS.

***Note**: Text in this format pertains to the topic being discussed in regular text and is set aside to emphasize a particular point.*

WARNING: Text found in this format is vitally important for the correct configuration of Educator². Please pay special attention to these.

System Description

Control

Touch Panel Control

A 10.4" color touch panel is used to control the entire TANDBERG Educator² system. The touch panel with optional integrated instructor microphone is typically placed on a desk.

Audio

Audio Controls

You can change the loud speaker sound level with the touch panel audio controls. You can also mute the microphones to have a private conversation during a distance education session. The built-in echo canceller dynamically trains itself to compensate for the acoustics of the room.

Loudspeakers

The system features speakers integrated into the instructor and student monitor carts.

Audio/Video Sources

Instructor, Student, and Document Cameras

The touch panel is used to control the position and zoom of all the cameras.

Auxiliary Sources

Two additional audio/video sources can be connected. These sources can be configured for a specific device such as a PC scan converter, DVD player, 35mm slide to video converter, and a room camera.

VCR/DVD Player*

For systems that have one VCR installed, you can either play a videocassette during a distance education session or record the session. If you have the optional Panasonic AG5700/5710 or PV-S9670, or Sony SLV models of VCR, or the Sony DVP-models DVD player you can use the touch panel to control of the VCR/DVD player operation.

For systems that have two VCRs installed, you can simultaneously play one VCR and record with the other.

** European model will differ.*

PC Presenter

A computer VGA connection is available as an input to the Educator². This allows VGA of a PC to connected to the system without using an external scan conversion unit. This input is capable of accepting 640x480, 800x600 or 1024x768 resolution.

Student Monitors

The student monitors are typically located side by side at the front of the classroom. Looking at the front of the monitors, the motion monitor is located on the left. It displays the video image received from the remote site. The local display/graphics monitor is located on the right. It displays the current transmission, duo video or the still image.

Instructor Monitor(s)

The instructor monitor(s) is typically located at the back of the classroom so that the instructor can see the remote rooms from the front of the classroom. The monitor(s) are set to display the same as the student monitors.

Touch Panel Video Window

The video window can display the, remote site, current transmission, or the last sent / received still image. By pressing on this window, the instructor can view the image full screen.

Power*

The SYSTEM ON and SYSTEM OFF buttons control the switched AC outlet on the TAM and the power control units. All peripherals that are connected using this power outlet or power control device will be switched on or off when these buttons are pressed.

Optional Equipment

Document Camera

The standard document camera is the TANDBERG Documentor camera with full touch panel control. Other cameras that can be used are the ELMO EVSeries with RS232 Control, Sony VID-PSeries withRS232 Control and the Wolfvision VZ series. The customer can also supply his own camera as long as it provides a composite video output.

VCR (Video Cassette Recorder)

The standard VCR (North America) is the Sony consumer SLV models with full touch panel control, but other VCRs can also be configured.

DVD (Digital Versatile Disc) Player*

The DVD player can be controlled from both the touch panel and its own infrared remote control device.

Monitor Upgrades

All monitors can be upgraded from the standard 27" to either 32" or 36" monitors.

Additional Microphone

An additional AudioScience microphone is available, with cable, to allow coverage of large rooms.

** North America only.*

Director Microphone

The Director microphone is a directional version of the AudioScience microphone. This ceiling mounted microphone replaces the one on the touch panel allowing the lecturer more freedom of movement around the teaching area while retaining good audio pick up.

Touch and Talk Microphones*

Touch and talk microphones can be added to allow a student control of their local microphone activation and their image transmission. To active the microphone the student must press and hold the talk button. A maximum of 40 TNT microphones can be connected to the system via a master electronics module.

Telephone Add-on*

This allows a telephone caller to be brought into the conference call, and hear and be heard by all other parties.

Pressure Mats (automatic camera positioning)

Up to five pressure mats are available for placement in the areas most commonly used by the instructor. To activate, simply stand on the mat, the defined instructor camera can be configured to automatically move to the predetermined location and/or switch to another video source, for the activated mat.

TANDBERG Trackers (automatic camera positioning)

Up to 12 Trackers can be used by the system, allowing the user to request the Student Camera to focus on them. This option is only available for the Student Source with the WAVE camera configured.

Auxiliary 35 mm Slide to Video Converter*

A 35-mm slide to video converter is available to allow slide presentations as part of the system. The Elmo TRV-35H slide to video converter can be controlled from the touch panel.

Auxiliary Room Camera with Wide Angle Lens

An additional room camera with a wide-angle lens is available to view large rooms.

Auxiliary High Quality VGA/SVGA Scan Converter*

A high quality PC VGA to composite video scan converter is available.

Network Terminating Units NT1 and NT384*

Network terminating units are available to provide an interface for the ISDN BRI lines between the Codec and the site's network provider lines.

** North America only.*

Installation

Precautions

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninstalled telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
- The socket outlet shall be installed near to the equipment and shall be easily accessible.
- Never do any installation of cables without first unplugging the power cords of the applicable equipment.
- Do not exceed the 6A rating of the switched power outlet on the TAM.
- 1TR6 network type is not approved for connection directly to the telecommunications network. This network type is only to be used behind a PABX.
- X.21 network type is not approved for connection directly to the telecommunications network. This network type is only to be used together with already approved equipment, and is not meant for direct connections to the telecommunication networks.
- V.35/RS-449/RS-366 network type is not approved for connection directly to the telecommunications network. This network type is only to be used together with already approved equipment, and is not intended for direct connection to the telecommunication networks.

Unpacking

The TANDBERG Educator² is shipped in several crates. Each crate identifies its contents. We recommend that you store all packaging materials in case the need should arise to transport the system to another location. To repack the system, reverse the steps described to unpack it.

1. Remove the straps that secure the box to the skid.

WARNING: We recommend that at least two people unpack the cart.

2. Lift the box straight up and off the cart.
3. Remove the foam packing.
4. The cart rests on a foam base, which acts as a shock absorber during transportation. Using two people, lift the cart off the foam face.
5. Unpack both the TAM and the NAM units from the crates.

Room Configuration and Setup

The Tandberg Application Module (TAM)$_2$ has been designed to provide versatility for installation at any site. The following sections describe the Educator^2 installation using TANDBERG carts in a typical room setup. If TANDBERG carts are not used, install the TAM and other equipment in a similar manner, as per site requirements. Continue with the cabling instructions that are applicable, no matter where the TAM is located.

After the equipment has been unpacked, move each cart to its position within the room. For a typical room, the following illustration shows approximately the recommended position of each cart and the AudioScience microphone that is to be mounted on the ceiling.

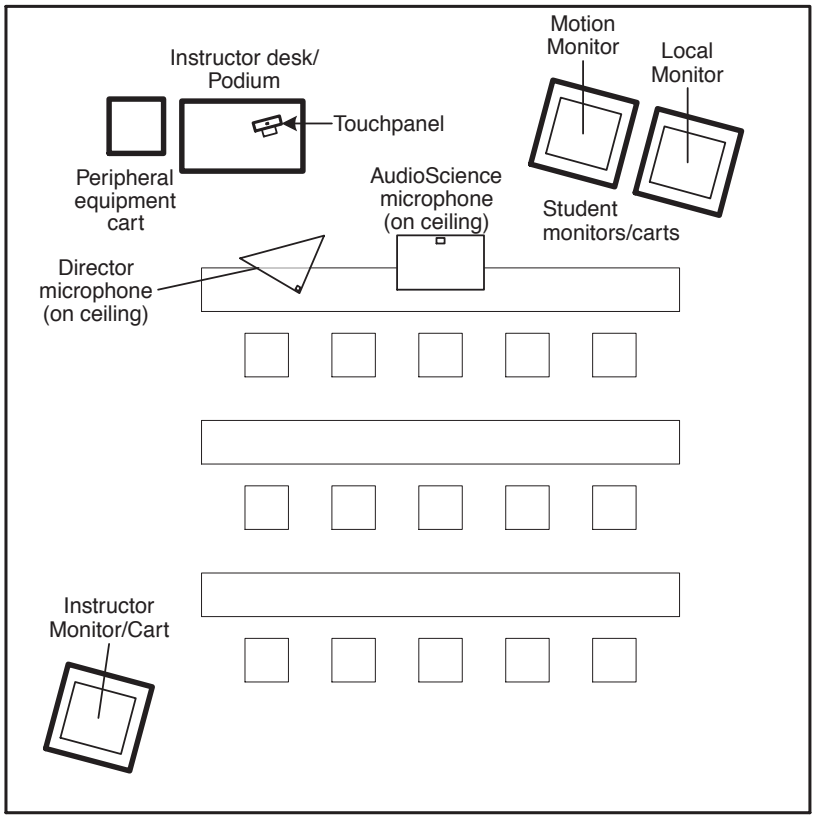


Figure 2 Recommended Room Layout

To begin the installation:

1. Carefully place each monitor on its respective cart. Position the monitor in the center of the cart but no further forward than indicated by the CAUTION label on the cart. Secure the rear of the monitor to the cart using the strap provided.

WARNING: Even after the monitor has been secured to the cart by the rear strap, never move the cart by holding the monitor.

2. Mount the TANDBERG WAVE camera on top of the left student monitor and the

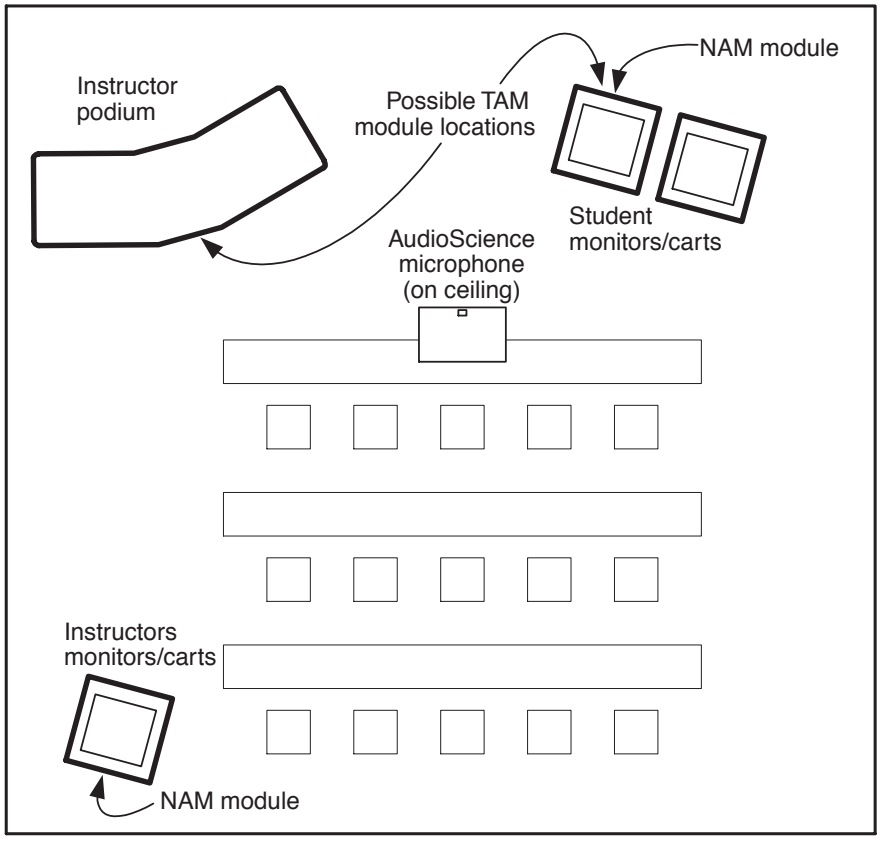
   Sony camera on top of the instructor monitor using Velcro strips. Three Velcro strips are provided in the camera documentation package as well as an instruction sheet that shows where each strip is to be placed on the bottom of the camera.

3. Install the AudioScience microphone as described by the installation procedures contained in Appendix 1.

NAM and TAM Location

The NAM and TAM electronics are pre-mounted into sleeve modules. The sleeve modules are designed to be installed by simply sliding into the shelf of the appropriate cart. Depending on the room configuration the following is recommended:

- TAM module can be installed in the **Instructor podium** or in the **Student monitor cart**. The location of the TAM module is normally dependent on the communication cabling and wall plugs. (Instructor Podium recommended as 1st option)
- The NAM module is installed in the **Student monitors/cart**.
- If the system is equipped with an instructor monitor/cart, install the additional NAM sleeve into the **instructor monitor/cart**.



NAM and TAM Module Installation

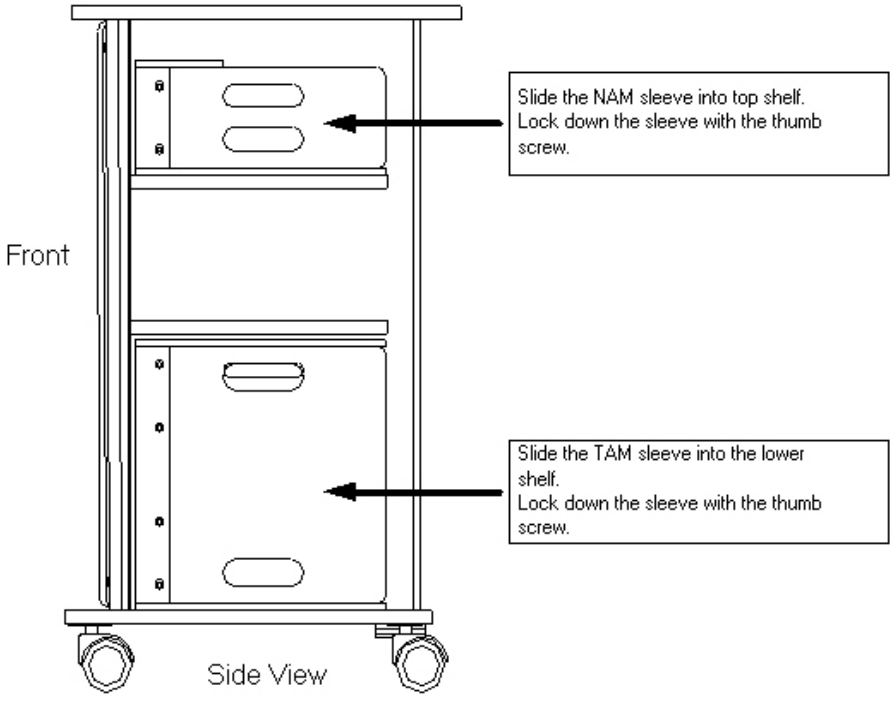
To install the NAM and TAM modules perform the following steps:

Install the NAM module in the **Student monitors/cart** remove the back panel of the cart by using the key (provided with the cart) and pushing on the lock.

1. Remove the back panel
2. Unscrew the thumbscrew on the top shelf.
3. Slide the NAM module into the top shelf.
4. Lock down the NAM module by replacing the thumbscrew.

   ***Note**: If the system is configured with an Instructor monitor/cart, install the NAM module using the above steps.*

5. Install the TAM module in the either the **Instructor podium** or **Student monitors/cart** remove the back panel of the cart by using the key (provided with the cart) and pushing on the lock.
6. Remove the back panel
7. Unscrew the thumbscrew on the top shelf.
8. Slide the TAM module into the bottom shelf.
9. Lock down the TAM module be replacing the thumbscrew.

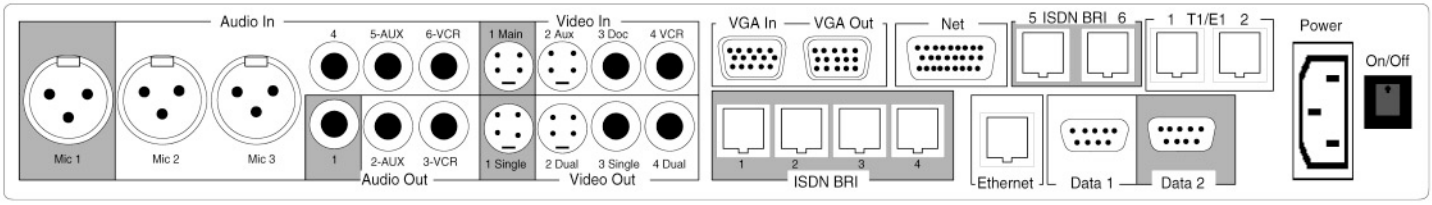

Slide the NAM sleeve into top shelf.
Lock down the sleeve with the thumb screw.
Front
Slide the TAM sleeve into the lower shelf.
Lock down the sleeve with the thumb screw.
Side View

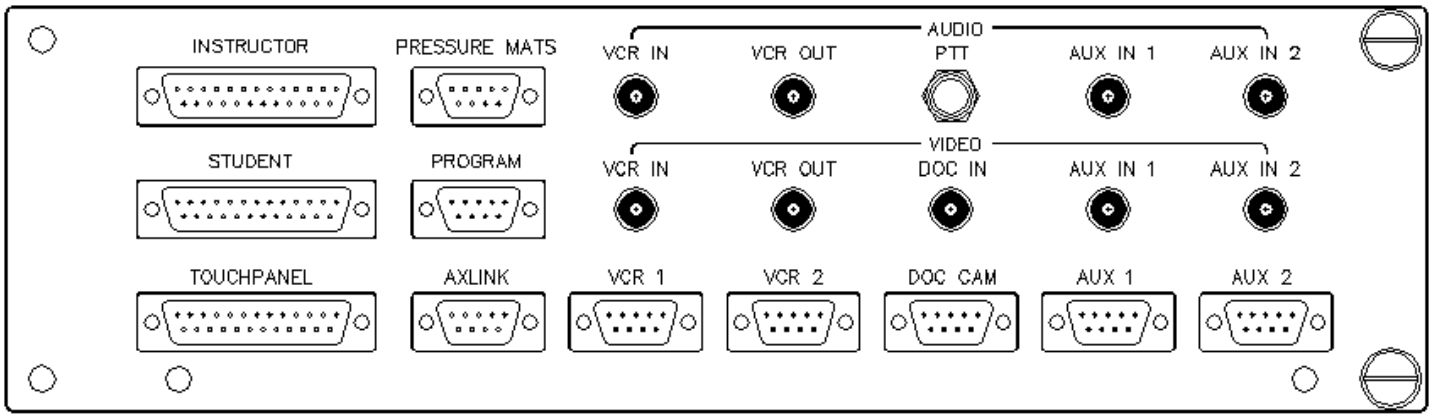
Educator/Tutor Extended Height Cart (EHC-03)

***Note**: If you have the Educator/Tutor Extended Height Cart (EHC-03), refer to Appendix 3 at the end of this manual.*

Cabling

System cables are connected at the rear of the TAM, either directly to the Codec or to the interface panel. Connect cables to the TAM as required. Coil any excess lengths of cable and place at the bottom of the carts.





1. Connect the TAM's power cord from the TAM's AC input socket to a suitable wall outlet.
2. If required, a power bar may be connected to the switched AC outlet of the TAM to provide switched power for peripheral equipment.

Cabling Configurations

Figure 3 shows the system cabling when the TAM is located in the Instructor podium.

Figure 4 shows the system cabling when the TAM is located in the Student cart. In this case, the AC power to the student peripherals is not controlled by a power control unit, but instead the AC power is connected to a power bar that is connected to the switched outlet of the TAM.

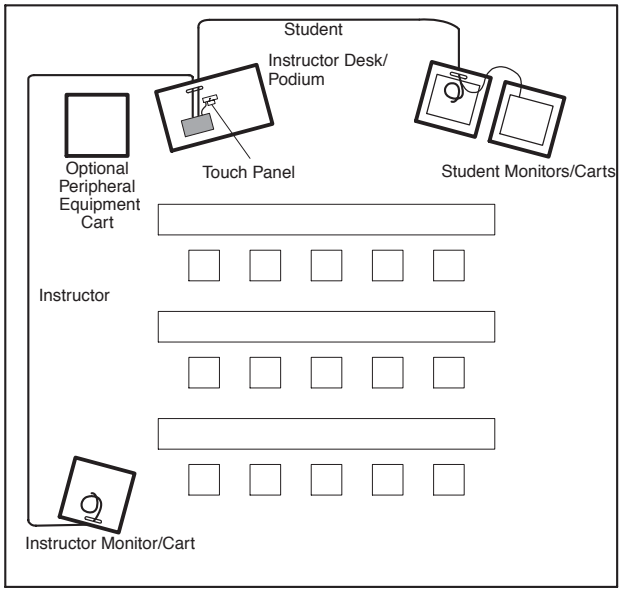


Figure 3 TAM Located in Instructor Desk/ Podium

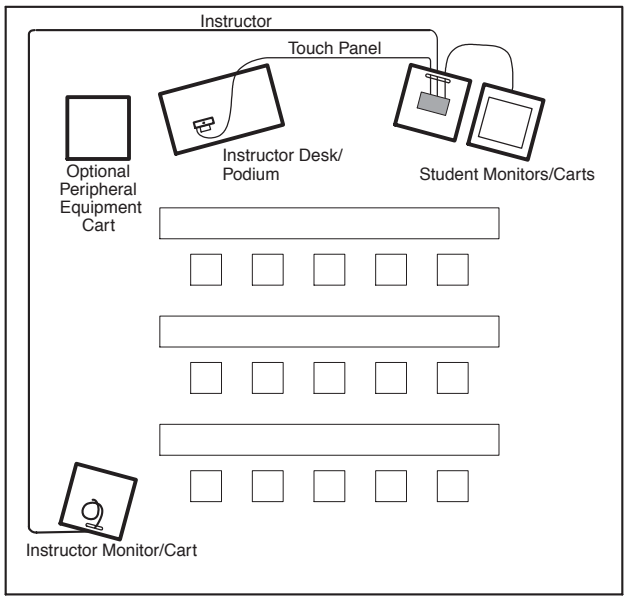
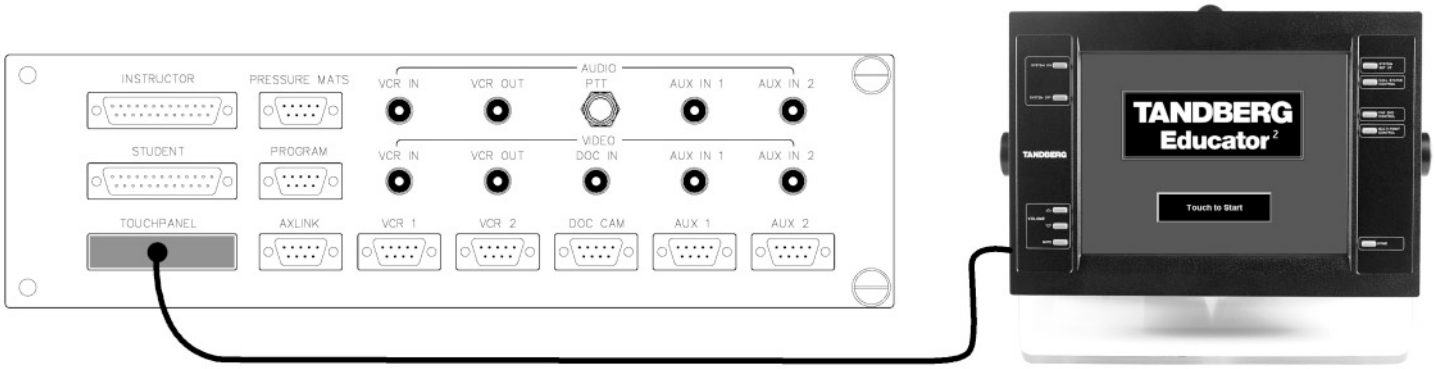


Figure 4 TAM Located in Student Cart

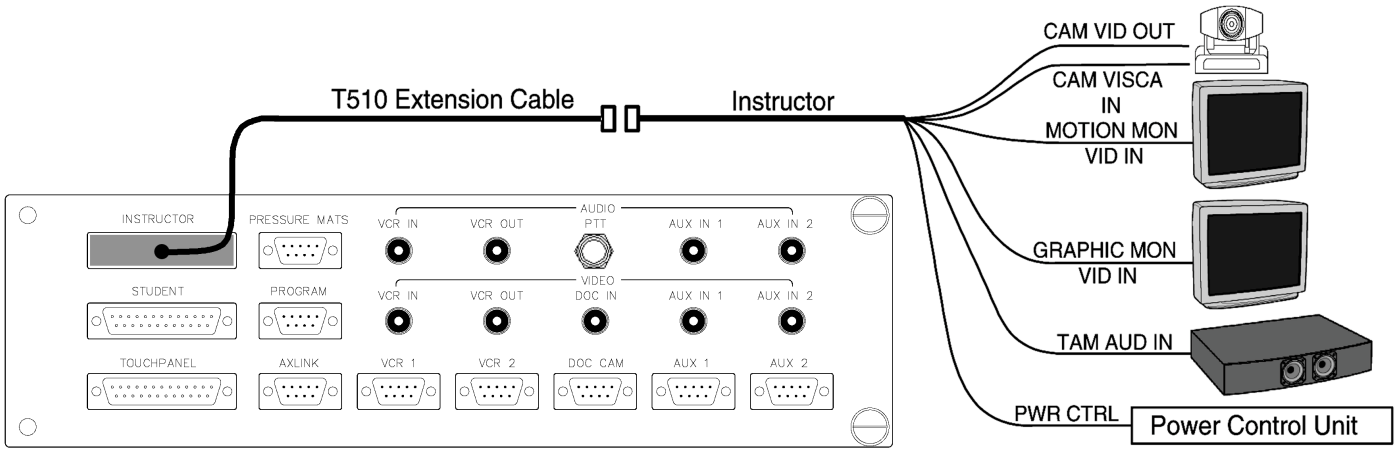
Touch Panel

Place the touch panel where it will be used such as on the instructor desk. Connect the touch panel cable to the TOUCH PANEL connector on the TAM interface panel.



Instructor

1. Connect the INSTRUCTOR cable to the INSTRUCTOR connector on the TAM interface panel. If the TAM is not located close enough to the equipment, use a TANDBERG T510 extension cable.



2. Route the instructor cables to the instructor equipment and connect as follows:

   i) Connect the cable labeled CAM VID OUT to the VIDEO output connector of the camera.

   ii) Connect the cable labeled CAM VISCA IN to the VISCA IN control connector of the camera.

   iii) Connect the cable labeled MOTION MON VID IN to the VIDEO input of the monitor.

   iv) Connect the cable labeled GRAPHIC MON VID IN to the VIDEO input of the monitor, if equipped.

   v) Connect the cable labeled TAM AUD IN to the AUDIO input of the Natural Audio module or other suitable amplified speaker.

   vi) Connect the cable labeled PWR CTRL to the control input of the power control unit. (North America only)

3. Plug the power cord of the instructor cart into a suitable wall outlet. Connect a power bar to the power output of the control unit. Use the power bar to power the instructor equipment.

4. Connect the camera's power cord from the DC IN 13.5V power socket of the camera to the instructor power bar.

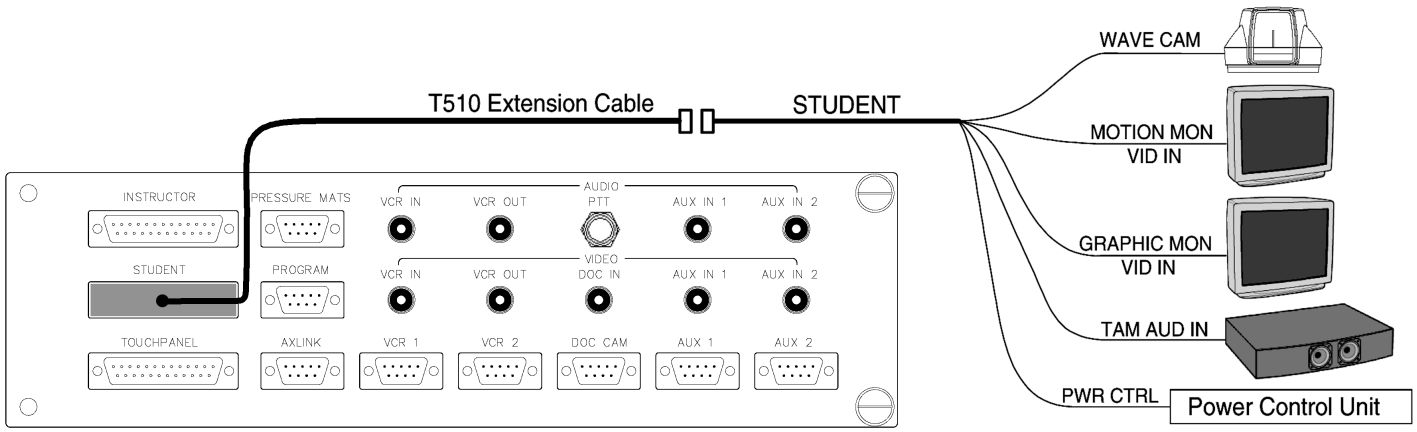
5. Plug the monitor's power cord into the instructor power bar.

Educator/Tutor Extended Height Cart (EHC-03)

***Note**: If you have the Educator/Tutor Extended Height Cart (EHC-03), refer to Appendix 3 at the end of this manual.*

Student

1. Connect the STUDENT cable to the STUDENT connector on the TAM interface panel. If the TAM is not located close enough to the equipment, use a TANDBERG T510 extension cable.



2. Route the student cables to the student equipment and connect as follows:

   i) Connect the cable labeled WAVE CAM to the WAVE camera.

   ii) Connect the cable labeled MOTION MON VID IN to the VIDEO input of the "motion" monitor, the monitor which will be displaying images from the remote site.

   iii) Connect the cable labeled GRAPHIC MON VID IN to the VIDEO input of the "graphic" monitor, the monitor which will be displaying images from local sources.

   iv) Connect the cable labeled TAM AUD IN to the AUDIO input of the Natural Audio module or other suitable amplified speaker.

   v) Connect the cable labeled PWR CTRL to the control input of the power control unit. (North America only)

   ***Note**: When the TAM is located in the student cart, the power control unit is not used. In this case, peripherals are powered from a power bar that is connected to the switched outlet of the TAM.*

3. Plug the power cord of the power control unit into a suitable wall outlet. Connect a power bar to the power output of the control unit. Use this power bar to power the student equipment.

4. Connect the camera's power cord to the student power bar. Use the power adapter cable supplied with the system for the wave camera.

5. Plug the power cords of both monitors into the student power bar.

Educator/Tutor Extended Height Cart (EHC-03)

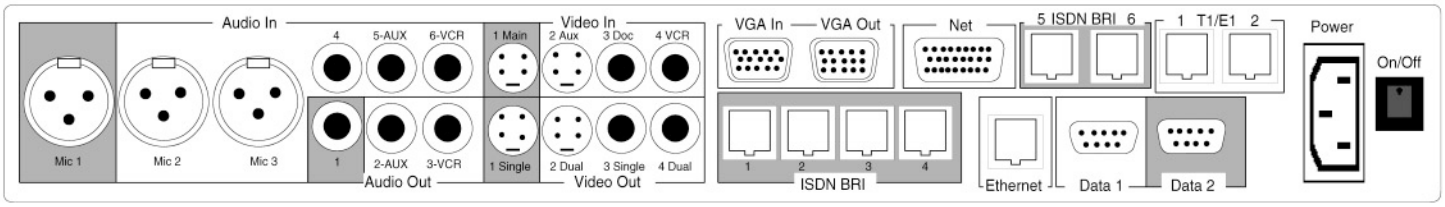
***Note**: If you have the Educator/Tutor Extended Height Cart (EHC-03), refer to Appendix 3 at the end of this manual.*

AudioScience Microphone

1. See *Appendix 1: AudioScience Microphone.*
2. Connect the AudioScience microphone cable to MIC 2 on the rear of the Codec.
3. An additional AudioScience microphone may be connected to MIC 3 on the rear of the Codec.
4. Set the Audio Input level in the " Audio Setup Page". A 19.5dB is a good nominal value.

Network

Connect the network cables that are applicable to the site. Refer to the VISION 6000 User Manual for more information concerning other network equipment that may be required such as network terminating units and CSUs.



ISDN BRI

Connect each cable (labeled 1 to 6) within the ISDN BRI cable loom to the ISDN BRI sockets on the Codec. Then connect the other end of the loom to the appropriate wall sockets. If however, the wall sockets provide an ISDN U-interface, the ISDN lines from the Codec must first be connected to the S/T interface of network terminating units NT1 and NT384. Then connect the U interface of the network terminating units to the wall sockets.

ISDN E1/T1

Connect the E1/T1 cable to the E1/T1 socket labeled "1" on the Codec. Connect the other end of the cable to a Channel Service Unit (CSU). Then connect the CSU to the site's E1/T1 line.

External Network

Connect an RS366/V35/RS449 or X21 cable from NET on the Codec to CSU #1. Connect the CSUs to the appropriate wall sockets.

Ethernet

Connect the LAN cable from the Ethernet connector on the rear of the Codec to the site's Ethernet network connection.

***Note**: For instruction concerning interface configuration, see: Ethernet Diagnostic Setup.*

Network Terminating Units NT1 and NT384 (North America only)

Install network terminating units when the site's network provider ISDN BRI lines provides a U interface.

The U interface of the unit is connected to the outside network, and the S/T interface of the unit is connected to the internal system network (Codec ISDN BRI connectors). The status of the ISDN lines can be determined by examining the color-coded lamps that are on the font panel of each unit.

NT1

Lamp	Indicates that:
U ACTIVE	The outside line is available for use. (The U interface has been acquired.) This lamp may take up to 30 seconds to light.
S/T ACTIVE	The internal ISDN equipment is ready. (The S/T interface has been acquired.)
NOT READY	There is a problem with the U or S/T interface and it is not ready for data transmission. If this lamp remains lit, check cabling and network connections.

NT384 (ISDN Lines 1, 2, and 3)

Lamp	Indicates that:
Green	The U and S/T interfaces are ready.
Orange	The U interface is ready, but the S/T interface is not ready.
Red	The U interface is not ready (therefore, the S/T interface is also not ready).

Network terminating unit model NT1 has two switches for configuration. These switches are factory set to the configuration required by the Educator² as follows:

S/T TERM (OHMS) is set to "100"

S/T WIRING is set to "LONG"

Installing Optional Equipment

The following installation procedures apply to specific models or types of optional equipment. If you are installing equipment other than those described, consult the documentation supplied with that equipment.

Optional equipment must be enabled on the Equipment Setup page.

WARNING: Peripheral equipment may be powered from the switched power outlet on the TAM, provided that the 6A rating of the TAM is not exceeded.

Document Camera

The document camera option is a ELMO EV-Series with RS232 or a similar device. Installation instructions for the TANDBERG Documentor are supplied with the camera.

***Note**: The Sony EVI-D30/31 document camera option is a custom configuration.*

1. Place the document camera as appropriate.
2. Connect the DOC CAM cables to the TAM interface panel as follows:
   i) Connect the cable labeled TAM I/P VIDEO DOC IN to the DOC IN VIDEO connector of the interface panel.
   ii) Connect the cable labeled TAM I/P DOC CAM to the DOC CAM DB-9 control connector of the interface panel.
3. Route the DOC CAM cables to the document camera.
4. Connect the cable labeled DOC CAM VIDEO OUT to the VIDEO OUT connector of the document camera.
5. Connect the cable labeled DOC CAM RS232C to the RS232C connector of the document camera.
6. Plug the document camera's power cord into an appropriate AC power outlet. This could be to a power bar that is connected to the switched power outlet of the TAM.
7. If the ELMO EV-Series AF is being used set the document camera DIP switches 1 and 2 in the UP position.

VCR

For instruction on VCR configuration, refer to the: Installing Optional Equipment page.

If one VCR is used, connect as follows. If a DVD is being connected to the VCR input, ignore the output references:

1. Place the VCR on an equipment cart.
2. Connect the VCR cables to the TAM interface panel as follows:
   i) Connect the cable labeled TAM I/P VCR VIDEO IN to the VCR IN VIDEO connector of the interface panel.
   ii) Connect the cable labeled TAM I/P VCR VIDEO OUT to the VCR OUT VIDEO connector of the interface panel.
   iii) Connect the cable labeled TAM I/P VCR AUDIO IN to the VCR IN AUDIO connector of the interface panel.
   iv) Connect the cable labeled TAM I/P VCR AUDIO OUT to the VCR OUT AUDIO connector of the interface panel.
   v) Connect the cable labeled TAM I/P VCR 1 to the VCR 1 DB-9 control connector of the interface panel.
3. Route the VCR cables to the VCR.
4. Connect the cable labeled VCR VIDEO IN to the VIDEO IN connector of the VCR.
5. Connect the cable labeled VCR VIDEO OUT to the VIDEO OUT connector of the VCR.
6. Connect the cable labeled VCR AUDIO IN to the AUDIO IN L/CH1 connector of the VCR.
7. Connect the cable labeled VCR AUDIO OUT to the AUDIO OUT L/CH1 connector of the VCR.
8. Connect the control cable labeled VCR RS2332C or S-LINK INor IR emitter to either the:

   CONTROL-S connector of the VCR or over the IR receiver.
   or
   RS232C connector of the Panasonic VCR.
9. Plug the VCR's power cord into an appropriate AC power outlet. This could be to a power bar that is connected to the switched power outlet of the TAM.

***Note**: If a domestic VCR is used, connect all the cables as instructed above except for the control cable.*

If separate playback and record VCRs are used, connect as follows:

1. Place the VCRs on an equipment cart.
2. Connect the VCR cables to the TAM interface panel as follows:
   i) Connect the cable labeled TAM I/P VCR VIDEO IN to the VCR IN VIDEO connector of the interface panel.
   ii) Connect the cable labeled TAM I/P VCR VIDEO OUT to the VCR OUT VIDEO connector of the interface panel.
   iii) Disconnect the cable labeled T302-0030 from the CODEC AUD IN 5. Connect this to the supplied audio extension cable. The extension cable must be connected to AUDIO INPUT 2, left channel of the mixer.
   iv) Connect the cable labeled TAM I/P VCR AUDIO IN from the MIXER OUTPUT to the VCR IN AUDIO connector of the interface panel.
   v) Connect the cable labeled TAM I/P VCR 1 to the VCR 1 connector of the interface panel.
   vi) Connect the control cable labeled TAM I/P VCR AUDIO OUT to AUX 2 OUTPUT connector of the codec.
3. Route the VCR cables to the VCRs.
4. Connect the cable labeled VCR VIDEO IN to the VIDEO IN connector of “record” VCR.
5. Connect the cable labeled VCR VIDEO OUT to the VIDEO OUT connector of “playback” VCR.
6. Connect the cable labeled VCR AUDIO IN to the AUDIO IN L/CH1 connector of “record” VCR.
7. Connect the supplied cable from the to AUDIO OUT L/CH1 connector of “playback” VCR to the AUDIO INPUT 12, left channel of the mixer.
8. To playback VCR locate the infrared sensor on the VCR.
9. remove the sticky tape backing on the emitter.
10. Place the emitter in front of the infrared sensor.

***Note**: If domestic VCRs are used, connect all the cables as instructed above except for the control cables*.

DVD Player

To connect the DVD player as an auxiliary input:

1. Place the DVD player in an equipment cart.
2. Connect the AUXILIARY DVD cables to the AUXILIARY 1 connectors on the TAM interface panel:
   i) Connect the cable labeled TAM I/P VIDEO AUX IN 1 to the VIDEO AUX IN 1 connector of the interface panel.
   ii) Connect the cable labeled TAM I/P AUDIO AUX IN 1 to the AUDIO AUX IN 1 connector of the interface panel.
   iii) Connect the cable labeled TAM I/P AUX 1 to the AUX 1 connector of the interface panel.
3. Route the AUXILIARY DVD cables to the DVD player.
4. Connect the cable labeled AUX VIDEO OUT to the VIDEO OUT connector of the DVD player.
5. Connect the cable labeled AUX AUDIO OUT to the AUDIO OUT connector of the DVD player.
6. To playback VCR locate the infrared sensor on the VCR.
7. remove the sticky tape backing on the emitter. (North America only)
8. Place the emitter in front of the infrared sensor. (North America only)

***Note**: If a domestic DVD player is used, connect all the cables as instructed above except for the control cable*.

Scan Converter (North America only)

An optional scan converter can be installed within a peripherals cart as follows:

1. Place the scan converter on a shelf within the cart.
2. Connect the cable labeled TAM I/P VIDEO AUX IN to the VIDEO AUX IN 1 or 2 connector of the TAM interface panel.

   ***Note**: If the Focus TView Gold scan converter is installed it is possible to control this device from the touch panel. Connect the cable labeled TAM I/P AUX 1 IR to the AUX 1 DB-9 control connector of the I/O panel. In addition, a sticky infrared emitter must be attached to the Focus TView Gold infrared window.*
3. Connect the cable labeled AUX VID OUT to the video output connector of the scan converter.
4. Plug the scan converter's power cord into an appropriate AC power outlet. This could be to a power bar that is connected to the switched power outlet of the TAM.

35mm Slide to Video Converter (North America only)

The 35mm slide to video converter option is an Elmo TRV-35H or a similar device.

1. Place the slide to video converter as appropriate.
2. Connect the AUXILIARY TRV cables to the AUXILIARY 1 connectors on the TAM interface panel:
   i) Connect the cable labeled TAM I/P VIDEO AUX IN 1 to the VIDEO AUX IN 1 connector of the interface panel.
   ii) Connect the cable labeled TAM I/P AUX 1 to the AUX 1 connector of the interface panel.
3. Route the AUXILIARY TRV cables to the slide to video converter.
4. Connect the cable labeled AUX VID OUT to the VIDEO OUT connector of the slide to video converter.
5. Connect the cable labeled AUX 1 to the RS232C connector of the slide to video converter.
6. Plug the slide to video converter's power cord into an appropriate AC power outlet. This could be to a power bar that is connected to the switched power outlet of the TAM.
7. Set the slide to video converter DIP switches 1 and 2 in the UP position.

PC Presenter

VGA

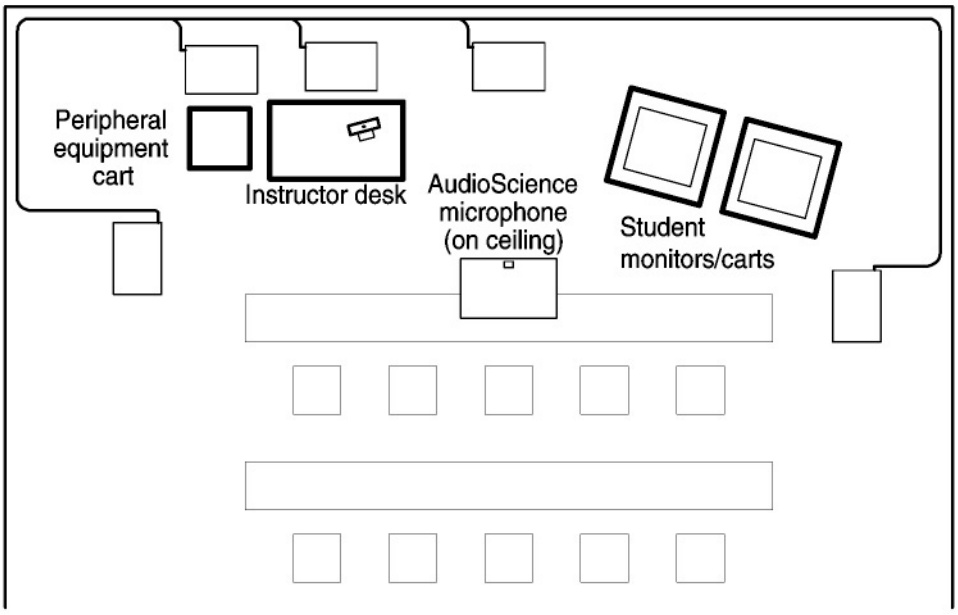
1. Requires male-to-male VGA cable.
2. Connect one end of the cable to the **VGA output** of the PC.
3. Connect the other end of the cable to the Codec **PC VGA in** of the Educator^{2}.
4. Make sure the PC is set to use its external VGA connection when using the laptop computer.
5. The PC Audio Output can be connected to the AUX IN 2 audio input if it is not being used by another device.

VNC

1. VNC requires **LAN** connection to the Codec.
2. VNC software must be installed on the PC.

Pressure Mats

1. Install the pressure mats connector box with double-sided tape strips in a suitable location near the TAM. Place the pressure mats at desired locations within the room. The illustration shows some possible locations for the mats.

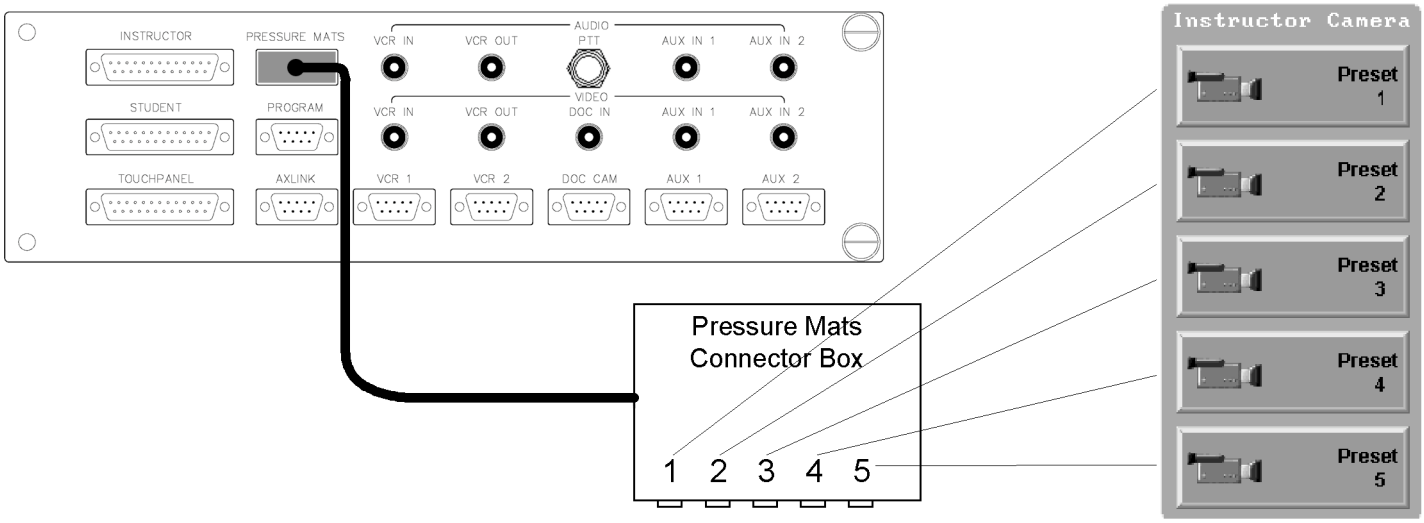


2. Route the cables for each mat along the walls of the room to the connector box, connect each cable to the connector box. Note that the sockets are labeled 1 to 5 and correspond to the configured instructor camera presets 1 to 5.

See section *Pressure Mats Configuration* to configure the pressure mats.

3. Use tie wraps to neatly store any unused cable lengths.

For more information on setting camera presets, see the Educator² User Manual.



TANDBERG Trackers

See *Appendix 2* of this manual. Room Camera

Room Camera

The standard room camera is a Sony EVI-D30/31 with a wide-angle lens.

1. Install the wide-angle lens adapter to the camera.
2. Mount the room camera in the desired location such as on top of the right-hand side student monitor. Three Velcro strips are provided in the camera documentation package as well as an instruction sheet that shows where each strip is to be placed on the bottom of the camera.
3. Connect the cable labeled TAM I/P VIDEO AUX IN 1 to the VIDEO AUX IN 1 connector of the TAM interface panel.
4. Route the AUXILIARY cable to the room camera and connect it to the composite output connector of the camera.

   ***Note**: Connect the camera power cable from the DC IN 13.5V power socket on the camera to a suitable local power bar/supply. This could be to one of the power bars that provides switched power.*
5. At the back of the camera, set the power switch to ON and the Backup switch to ON. Note that the Backup switch must be ON for the camera presets to be saved when the system is powered down.

Telephone Add-on (North America only)

The installation to the telephone add-on unit is discussed in document – D50090 – By TANDBERG Inc. This document is supplied with the telephone add-on assembly.

Touch and Talk Microphones (North America only)

The installation of the Touch and talk microphones is discussed in document – D5012803 – By TANDBERG Inc. This document is supplied with the TNT equipment.

The Director Microphone

This ceiling mounted microphone replaces the touch panel microphone.

1. See *Appendix 1: AudioScience Microphone* for assembly and installation.
2. Remove the existing touch panel microphone cable from the MIC 1 on the rear of the Codec.
3. Connect the Director microphone cable to MIC 1.

Set the Audio Input level in the Audio Setup Page. A 19.5dB is a good nominal value.

System Configuration

To configure the system, turn it ON by pressing **SYSTEM ON** in the upper left corner of the bezel. When power is applied to the system, the touch panel appears as follows:

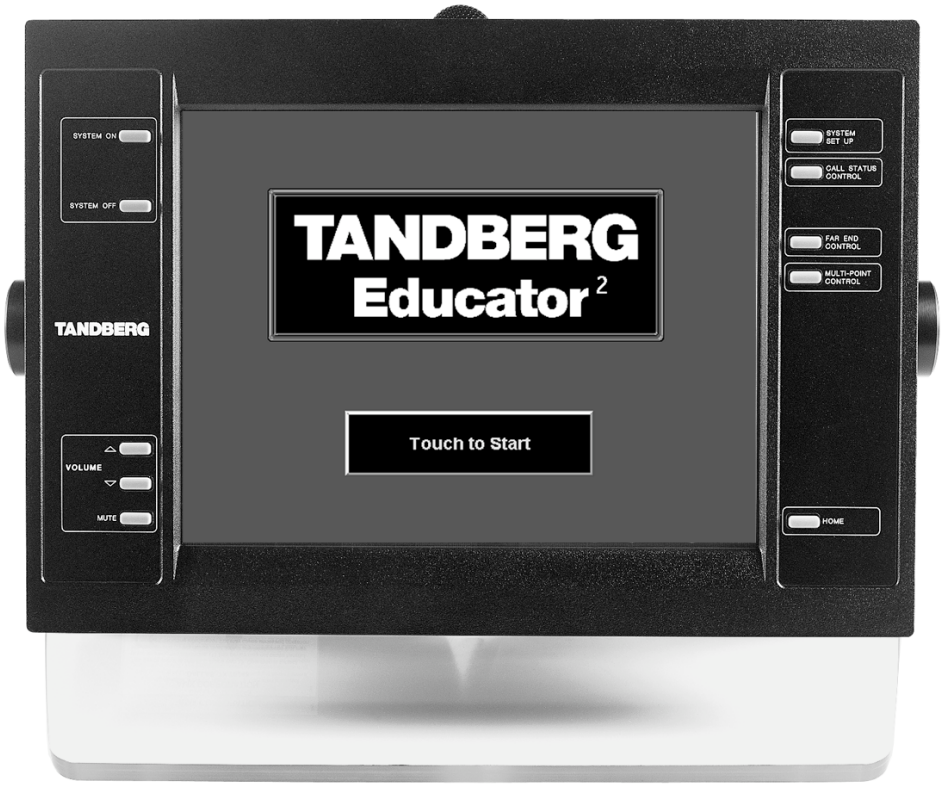


Figure 5 Touch Panel Opening Page

The “Please Wait” message appears while the system is loading. When the system has loaded, “Touch to Start” appears. Press **Touch to Start** to open the Main Operating page.

Protected Setup Page

The protected setup page is only used to adjust the time and date. The page is accessed by pressing the very bottom left corner of the opening page.

WARNING: Changes to the protected setup will affect the operation of Educator ².

Please note that on the Protected Setup page, **BEEP** must be set to **0**.

Time and Date

To set the time and date:

1. Access the Protected Setup page.
2. Press **SET TIME AND DATE**.
3. Use the up and down buttons to change the time and date as necessary.

System Set Up Button

Press **SYSTEM SETUP** and either the Main System Setup page or a key pad will appear on the screen. The key pad will only appear if the Password option has been selected in the System Setup page. To access the configuration pages when the password protection is active, you must enter the password on the key pad and press **Enter**. To return to the Main Operating page without entering a password, press **Cancel**.

If the proper password is entered, a compilation progress message window will appear followed by the System Setup Main page.

A button for each of the six pages is displayed at the top of screen so that any page can be directly accessed. The button of the active page is displayed in green. By default, the first page to be displayed is **Equipment Setup**. The following sections explain how to use each page.

An **EXIT** button is also located at the top of the screen. When you have finished making changes to the system configuration press **EXIT**. The system configuration will be updated and the Main Operating page will be displayed.

Key Pad

The key pad will be displayed when numeric inputs such as the password, ISDN line numbers, etc., are required.

Button	Functions
0-9, *, #	Press the number keys as required.
Delete	Erases the last character entered.
Cancel	Discards any key pad entry and closes the key pad window.
Enter	Accepts the key pad entry and closes the key pad window.

Terminal Setup Page

Press **TERMINAL SETUP** to display the Terminal Setup page (see following figure). Different options will be displayed for configuring the ISDN-BRI/ PRI, Leased Line and External networks as shown in Figure 6.

For each installation of the Educator², it is necessary to select the correct Network Type before making a call. In addition, you must program your network settings in order to be able to answer or make calls.

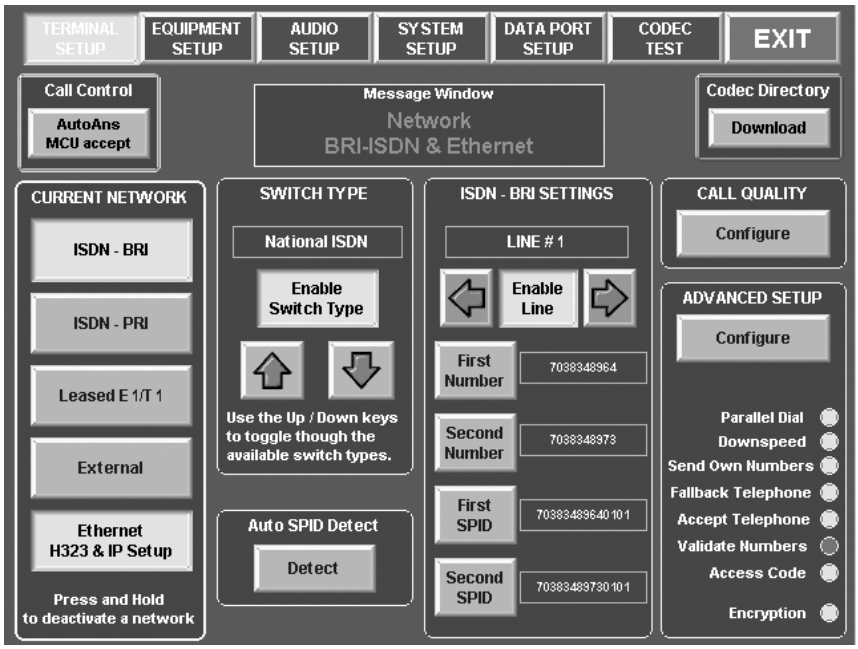
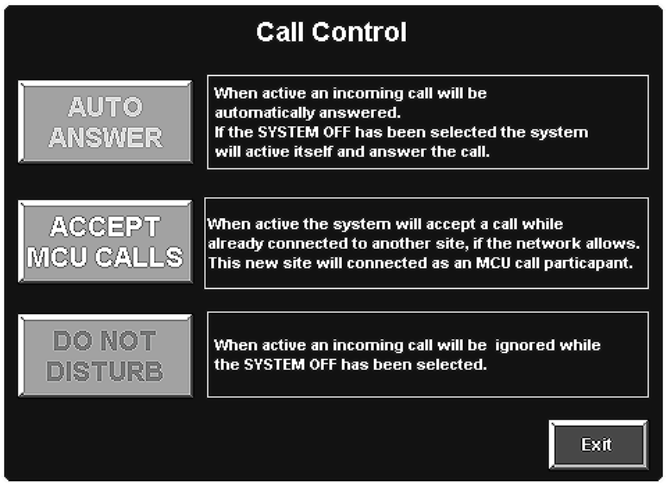


Figure 6 Terminal Setup Page (ISDN-BRI Settings)

Buttons	Functions
ISDN-BRI	Operates the system by means of ISDN-BRI.
ISDN-PRI	Operates the system by means of ISDN-PRI.
External	Press to use special networks and connect using RS449, V.35, or X.21. Press to connect to ISDN by means of an external IMUX.
Leased E1/T1	Operates the system by means of Leased E1/T1.
Ethernet H323 & IP Setup	Configures the Codec IP address and H323 Settings. When active H323 IP calls may be made.
Call Control	Configures the Auto Answer and Do Not Disturb functions and accepts MCU calls, see figure 12. Currently active functions will be displayed in the button body (DND, AutoAns, MCU Accept)
Download Codec Directory	Downloads the information stored within the Codec local or global call directories to the touch panel. This function can be used to restore speed dial information after a system upgrade.


Call Control
AUTO ANSWER
When active an incoming call will be automatically answered.
If the SYSTEM OFF has been selected the system will active itself and answer the call.
ACCEPT MCU CALLS
When active the system will accept a call while already connected to another site, if the network allows. This new site will connected as an MCU call particapant.
DO NOT DISTURB
When active an incoming call will be ignored while the SYSTEM OFF has been selected.
Exit

Codec Directory Download Controls
This will download the information stored within the Codec Call Directory to the touchpanel.
This function can be used to restore speed dial settings after a control system software upgrade.
Download Local Directory
Default Download
Select this to restore speed dials you programmed
Download Global Directory
Downloads global directories 1 to 95
TMS configures the global directories
Cancel

Figure 7 Set Up Call Control Options

ISDN-BRI Settings

Press **ISDN-BRI** in the CURRENT NETWORK panel of the Terminal Setup page to display this network's control options.

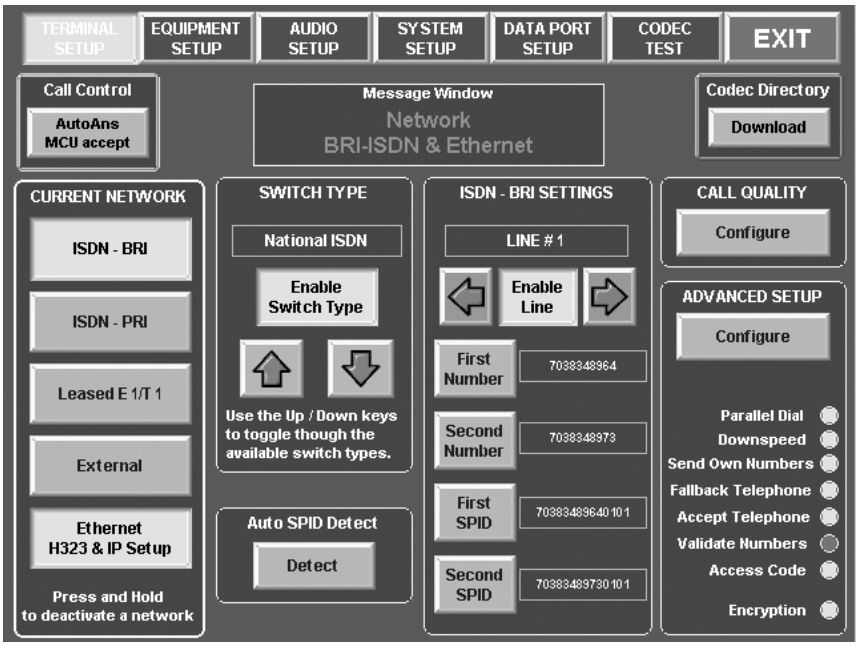


Figure 8 Terminal Setup ISDN-BRI Settings Page

Switch Type

Buttons	Functions
Enable Switch Type	Enables (activates) the switch type that is displayed in the switch type window.
Arrows (up/down)	Scrolls through the available switch types. The Enable Switch Type button is green when the active switch type is displayed in the window.

ISDN-BRI Settings

Use the arrows to select a line for which you will enter numbers. The line display window in the ISDN-BRI SETTINGS box shows the currently selected line. Press **ENABLE LINE** to enable the line. The Enable Line button is green when the active line is displayed in the window.

Buttons	Functions
Arrows (left/right)	Scrolls through the available ISDN-BRI lines for which data is to be defined. The currently selected line appears in the line display window in the ISDN-BRI SETTINGS box.
Enable Line	Activates the currently selected ISDN-BRI line in the Codec.
Auto SPID Detect	When the switch type is set for National ISDN, the Auto SPID Detect function window will be displayed. When selected the system will automatically configure the BRI number and SPID settings.
First Number	Configures or displays the first ISDN-BRI number. A key pad appears, use as described in Key Pad.
Second Number	Configures or displays the second ISDN-BRI number. A key pad appears. This button will not work unless the first number is entered.
First SPID	Configures the first SPID number. A key pad appears, use as described in Key Pad.
Second SPID	Configures the second SPID number. A key pad appears. This button will not work unless the first number is entered.

Advanced Setup

Buttons	Functions
	Press the button to display the **Advanced Call Setup** screen. Select as many options as required from the advanced setup panel.
	Parallel Dial performs a parallel dial. If set to ON (illuminated), dialed channels will be connected in parallel when setting up a Bonding call.
	Downspeed enables the Downspeed feature. When enabled (illuminated), the system will automatically adjust to the maximum available bandwidth.
	Send Own Numbers will send the Educator's own number to the remote site.
	Access Code the user will be prompted to enter an access code before gaining access to the call controls.
	Subaddress enters a Subaddress if ETSI or 1TR6 is selected as the switch type. Subaddress enables up to 8 ISDN terminals to be connected to the same ISDN line; each terminal is given a unique subaddress. A key pad appears, use as described in **Key Pad**. For use in Europe only.
	Validate Numbers MSN uses **Multi Subscriber Network (MSN).** MSN enables the user to attach different ISDN terminals, with different numbers, to the same physical ISDN line. For use in Europe only.
	Fallback to a telephone call connects to a telephone (audio only) call if the call can not connect on video.
	Accept a telephone call allows the system to connect automatically to incoming telephone calls.
	H320 DES Encryption Point To Point Only if the far end system supports encryption, when enabled the system will attempt to send encrypted data. This operation is a part of the codec call negotiation and requires no further user intervention. **Note:** If the far end system does not support encryption, the call will proceed without encryption.

Call Quality

Button	Function
	Pressing this button displays the Call Quality Configuration Screen (see: Figure 12).
	This allows the Codec to be set to make a specific type of call. The Codec will negotiate with the remote site using the given call parameters.
	Default Call Quality is the number of channels the system will attempt to call at unless changed using the 'Quality' function on the dialing page.
	Video Resolution: **QCIF**: Low resolution video (176 x 144 pixels). **CIF**: High-resolution video (352 x 288 pixels). **iCIF**: CIF resolution at 60 fields/sec. **4CIF**: Highest resolution (704 x 576 pixels). **AUTO**: Allows the system to set the optimal resolution.
	Video Mode: **H.261**: Normal video compression and decompression. **H.263**: Bandwidth efficient video compression and decompression. **AUTO**: Allows the system to set the optimal quality.
	Audio Mode: G.728: Compressed normal quality audio leaving more bandwidth for video. **G.711**: Normal quality audio (telephone quality, 3.1 kHz). **G.722** and **G.722.1**: High quality audio (7 kHz). **AUTO**: Allows the system to set the optimal quality.
	Optimize- Quality is a speed button, which sets all three elements to **AUTO**. AUTO lets the Codec determine the best call parameters to use.
	LOCK prevents the call quality controls from being used on the Call Status Control page. Press **LOCKED** to re-enable these buttons.

ISDN-PRI Settings

Press **ISDN-PRI/T1** in the CURRENT NETWORK panel of the Terminal Setup page to display this network's control options.

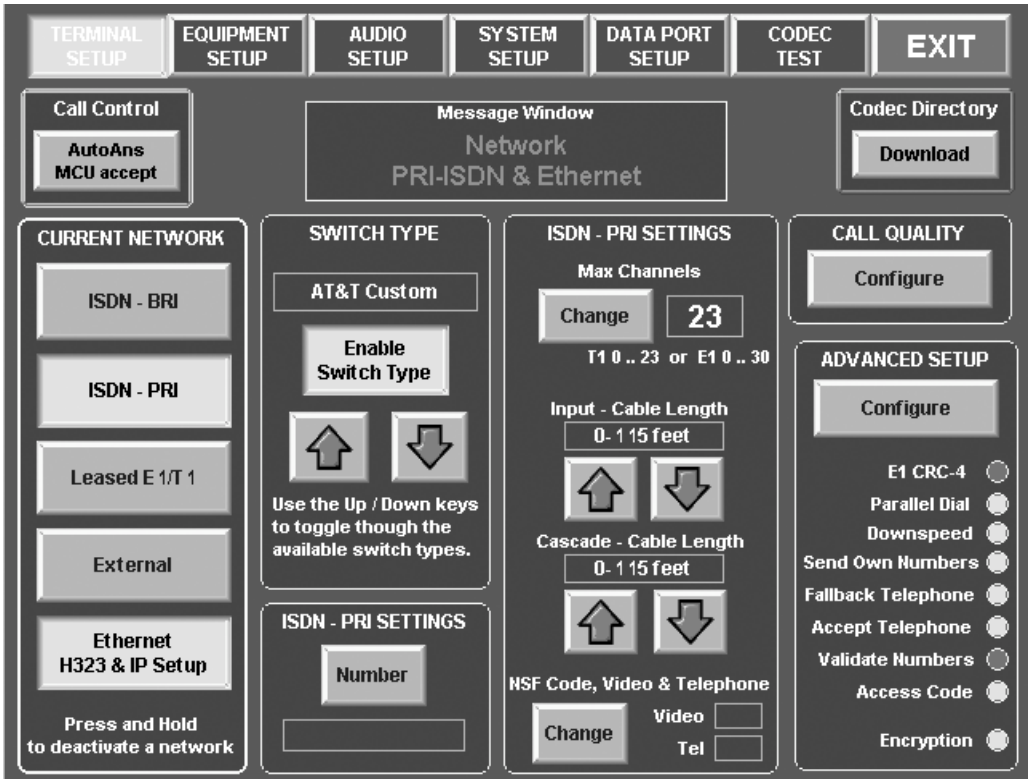


Figure 9 Terminal Setup ISDN-PRI Settings Page

Switch Type

Buttons	Functions
Enable Switch Type	Enables (activates) the switch type that is displayed in the switch type window.
Arrows (up/down)	Scrolls through the available switch types. The Enable Switch Type button is green when the active switch type is displayed in the window.

ISDN-PRI Settings

Buttons	Functions
Number	Programs the main number for the ISDN-E1/T1 line. Enter the number on the keypad; use as described in Keypad.
Max Channels	Use the arrow keys to specify the maximum number of channels available from the T1 CSU. The current maximum number of channels will be displayed in the white text box.
Cable Length	Use the arrow keys to specify the distance from the Educator2 to the CSU. The current length will be displayed in the white text box.
Cascade Cable Length	Use the arrow keys to specify the length of the cascading cable. The current length will be displayed in the white text box.
NSF **Non Standard Facility**	Your network provider may require a service selection in your ISDN configuration. To select the NFS code for a Video and Telephone calls, press the Change button. Valid NSF service codes are from 1 to 31. Enter 0 to disable NSF service codes. *Example: AT&T offers several digital switched services. These include SDN with service code 1 and ACCUNET with service code 6.*

Advanced Setup

Buttons	Functions
	Pressing this button displays the Advanced Configuration Screen. Select as many options as required from the advanced Setup Panel. **Note:** The Advanced Setup window has '**green**' and '**red**' indicators to show which settings are on or off.
	Subaddress enters a Subaddress if ETSI or 1TR6 is selected as the switch type. Subaddress enables up to 8 ISDN terminals to be connected to the same ISDN line; each terminal is given a unique Subaddress. A key pad appears, use as described in Key Pad. Only used in Europe.
	Parallel Dial performs a parallel dial. If set to ON (illuminated), dialed channels will be connected in parallel when setting up a Bonding call.
	Downspeed enables the Downspeed feature. When Enabled (illuminated), the system will automatically adjust to the maximum available bandwidth.
	Validate Numbers MSN uses Multi Subscriber Network (MSN). MSN enables you to attach different ISDN terminals, with different numbers, to the same physical ISDN line. Only used in Europe.
	Fallback to a telephone call connects to a telephone (audio only) call if call cannot connect on video.
	Send Own Numbers Sends the Educator's own numbers to the remote site.
	Accept a telephone call allows the system to connect automatically to incoming telephone calls.
	Access Code the user will be prompted to enter an access code before gaining access to the call controls.
	H320 DES Encryption Point To Point Only if the far end system supports encryption, when enabled the system will attempt to send encrypted data. This operation is a part of the codec call negotiation and requires no further user intervention. **Note:** If the far end system does not support encryption, the call will proceed without encryption.

Call Quality

Button	Function
	Pressing this button displays the Call Quality Configuration Screen (see Figure 12).
	This allows the Codec to be set to make a specific type of call. The Codec will negotiate with the remote site using the given call parameters.
	Default Call Quality is the number of channels the system will attempt to call at unless changed using the 'Quality' function on the dialing page.
	Video Resolution: **QCIF**: Low resolution video (176 x 144 pixels). **CIF**: High-resolution video (352 x 288 pixels). **iCIF**: CIF resolution at 60 fields/sec. **4CIF**: Highest resolution (704 x 576 pixels). **AUTO**: Allows the system to set the optimal resolution.
	Video Mode: **H.261**: Normal video compression and decompression. **H.263**: Bandwidth efficient video compression and decompression. **AUTO**: Allows the system to set the optimal quality.
	Audio Mode: G.728: Compressed normal quality audio leaving more bandwidth for video. **G.711**: Normal quality audio (telephone quality, 3.1 kHz). **G.722** and **G.722.1**: High quality audio (7 kHz). **AUTO**: Allows the system to set the optimal quality.
	Optimize- Quality is a speed button, which sets all three elements to **AUTO**. AUTO lets the Codec determine the best call parameters to use.
	LOCK prevents the call quality controls from being used on the Call Status Control page. Press **LOCKED** to re-enable these buttons.

External Network Settings

Press **External** in the CURRENT NETWORK panel of the Terminal Setup page to display the External Network controls.

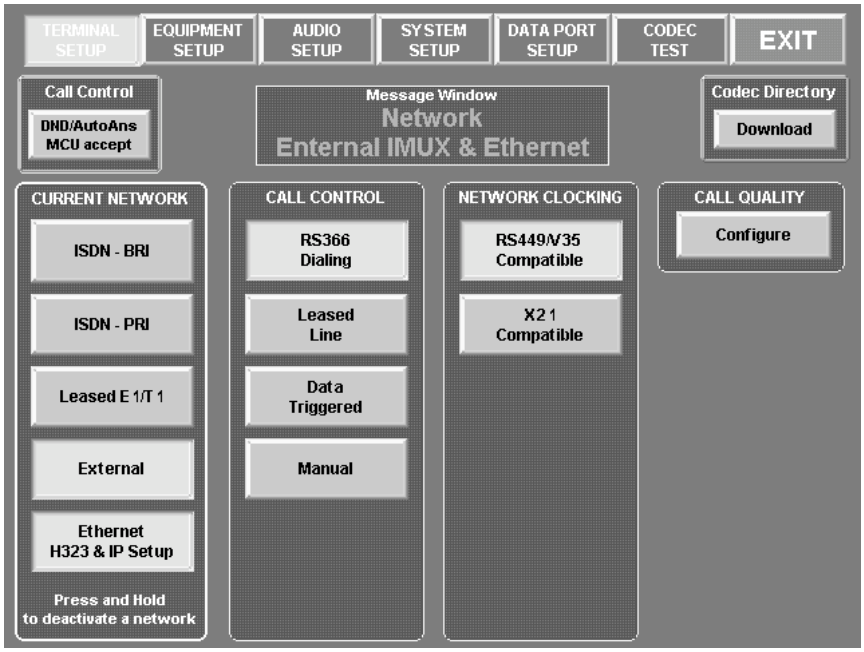


Figure 10 External Setup Page

Call Control

Buttons	Functions
RS366 Dialing	Enables RS366 dialing from the system, and is normally used together with network clocking. RS449/V35 compatible when the external equipment uses RS366 ports.
Leased Line	This is a non-dialing protocol and should be used when two Codecs are connected in a point to point connection.
Data Triggered	This mode uses TXData, RXData and clock signals only. Use this mode when no handshake signals are available.
Manual	This mode should be used when no handshake signals are available, and the external equipment requires a constantly connected line.

Network Clocking

Buttons	Functions
RS449/ V35 Compatible	Use when the external equipment provides two clock signals: one for transmit and one for receive.
X.21 Compatible	Use when the external equipment provides a common clock signal for both transmit and receive.

Leased E1/T1 Description

Press **Leased E1/T1** in the **CURRENT NETWORK** panel of the Terminal Setup page to display the Leased E1/T1 network control options.

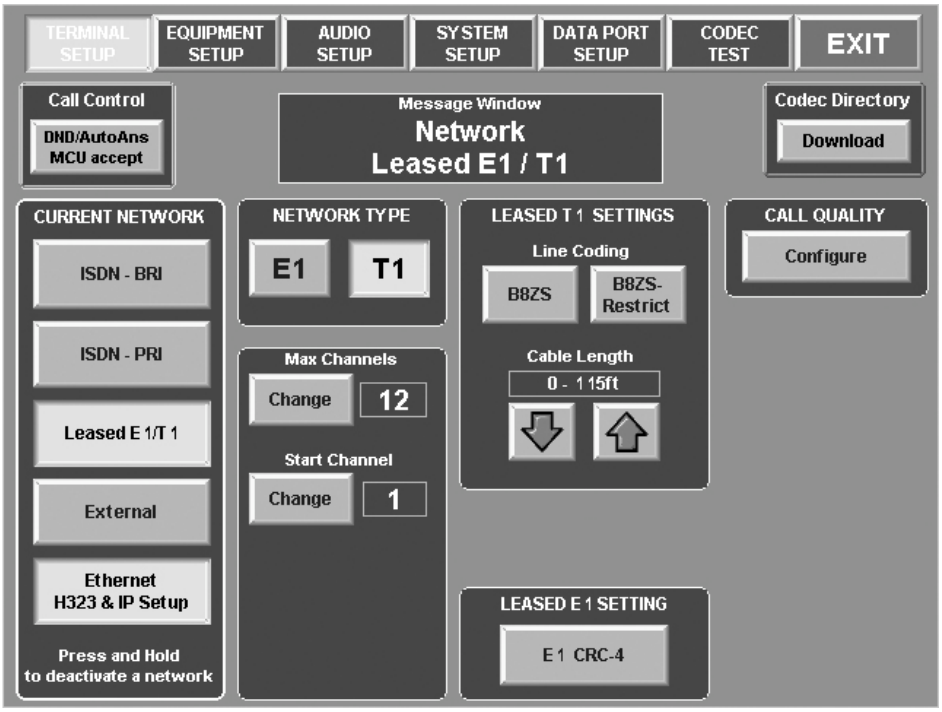


Figure 11 Leased E1/T1 Page

Network Type

Buttons	Functions
E1/T1 Switch Type	Enables the system type E1 (30 channels) or T1 (24 channels). E1 will be default for PAL versions and T1 will be default for NTSC versions.
MAX Channels	Indicates the maximum number of channels the Codec is allowed to use on the E1/T1 interface. When **E1** is selected, the maximum number of channels is 30. When **T1** is selected, maximum number of channels is 24. Use the **Change** button to specify the number of channels to be used by the system.
Start Channel	Indicates the first E1/T1 channel the Codec is allowed to use. This setting might be used if the E1/T1 line is shared with other equipment. Use the **Change** button to specify the number of channels to be used by the system.

Leased T1/E1 Settings

Buttons	Functions
LEASED T1 SETTING	
Line Coding	Indicates how the signals on the line should be coded. If parts of the line between the systems use restricted coding, this should be selected. **Note**: All settings must be identical on both sides of the T1 connection.
Cable Length	Use the arrow keys to specify the distance from the Educator² to the CSU. The current length will be displayed in the white text box.

LEASED E1 SETTING	
E1 CRC-4	CRC-4 is used for most E1-PRI configurations. You can turn it off if not supported by your E1 network equipment.

Call Quality

Button	Function
CALL QUALITY Configure	Pressing this button displays the Call Quality Configuration Screen (see Figure 12).
	This allows the Codec to be set to make a specific type of call. The Codec will negotiate with the remote site using the given call parameters.
	Default Call Quality is the number of channels the system will attempt to call at unless changed using the 'Quality' function on the dialing page.
	Video Resolution: **QCIF**: Low resolution video (176 x 144 pixels). **CIF**: High-resolution video (352 x 288 pixels). **iCIF**: CIF resolution at 60 fields/sec. **4CIF**: Highest resolution (704 x 576 pixels). **AUTO**: Allows the system to set the optimal resolution.
	Video Mode: **H.261**: Normal video compression and decompression. **H.263**: Bandwidth efficient video compression and decompression. **AUTO**: Allows the system to set the optimal quality.
	Audio Mode: G.728: Compressed normal quality audio leaving more bandwidth for video. **G.711**: Normal quality audio (telephone quality, 3.1 kHz). **G.722** and **G.722.1**: High quality audio (7 kHz). **AUTO**: Allows the system to set the optimal quality.
	Optimize- Quality is a speed button, which sets all three elements to **AUTO**. AUTO lets the Codec determine the best call parameters to use.
	LOCK prevents the call quality controls from being used on the Call Status Control page. Press **LOCKED** to re-enable these buttons.

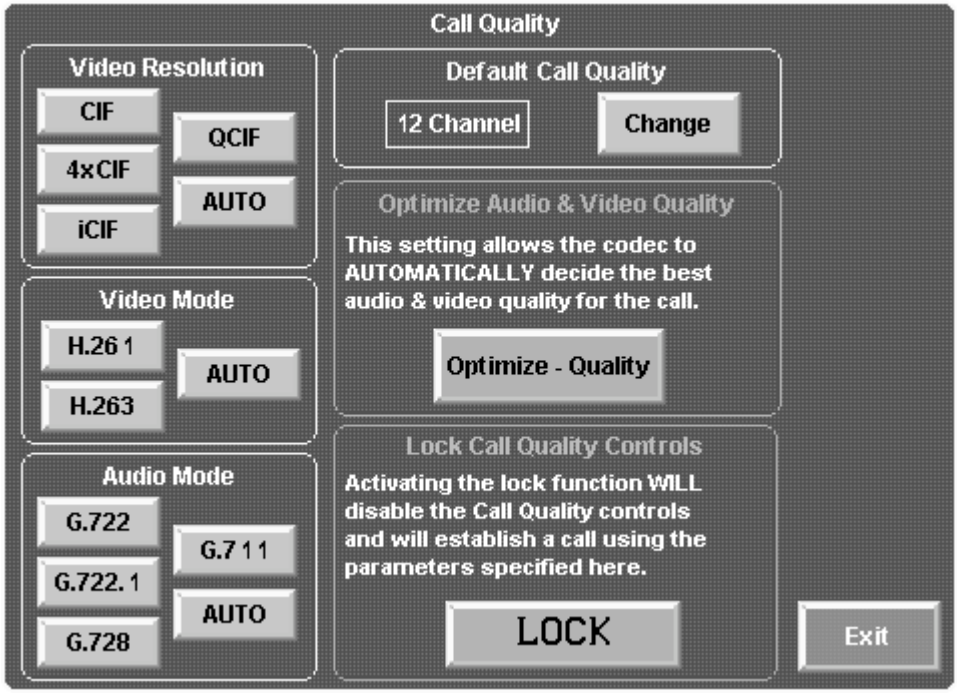


Figure 12 Call Quality Configuration Screen

Ethernet H.323 & IP Setup

Press **Ethernet H.323 & IP Setup** in the CURRENT NETWORK panel of the Terminal Setup page to display the controls for configuring the IP addresses. The controls are:

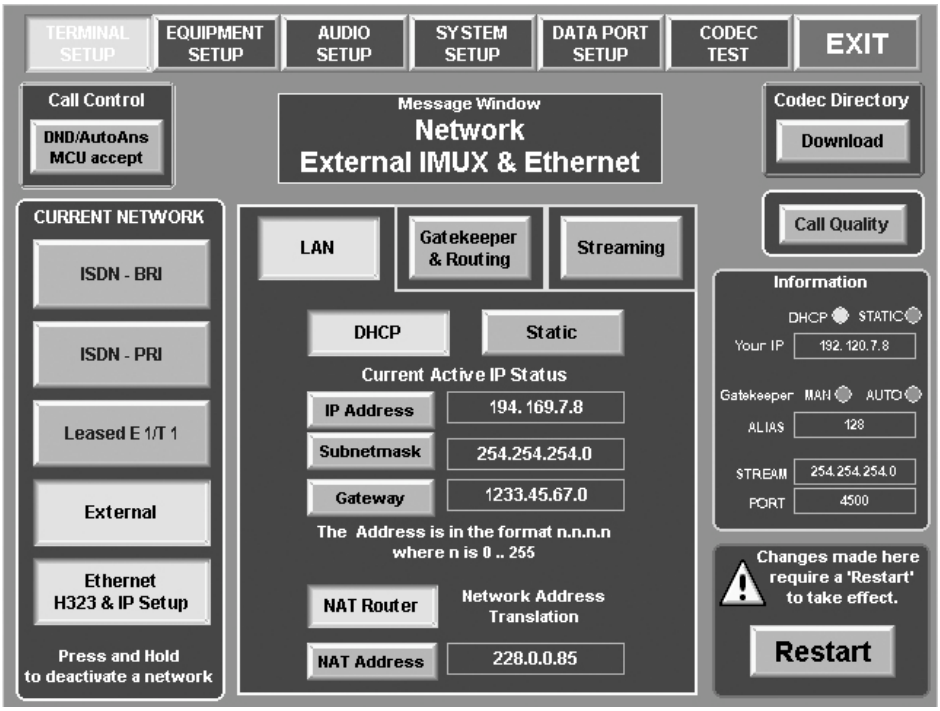


Figure 13

Ethernet Diagnostic Setup Page

DHCP

Buttons	Functions
DHCP	Enables the Codec to automatically receive all the necessary address information from the DHCP server.
Static	De-activates the (Dynamic) DHCP and allows manual configuration of the IP address and Subnet mask IP and Gateway addresses.

Current Active IP Status

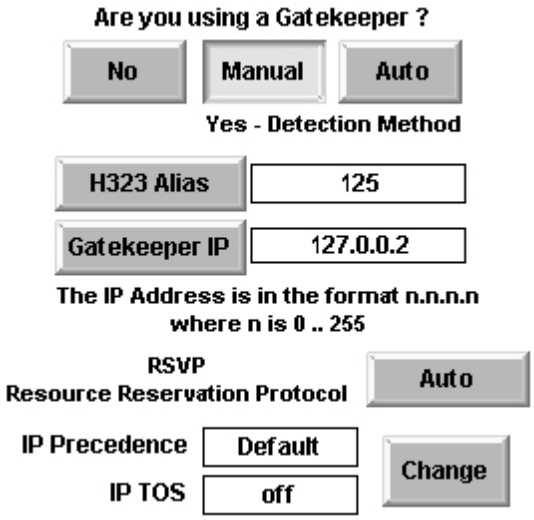
When **Static Assignment** is active the following buttons are available for IP configuration.

Buttons	Functions
IP Address	Press to enter the IP address using pop-up key pad.
Subnetmask	Press to enter the Subnetmask IP address using pop-up key pad.
Gateway	When using the dynamic assignment, press to manually enter the gateway IP address that will override the gateway IP address provided by the DHCP server. When using the static assignment, press to manually enter the gateway IP address.

NAT

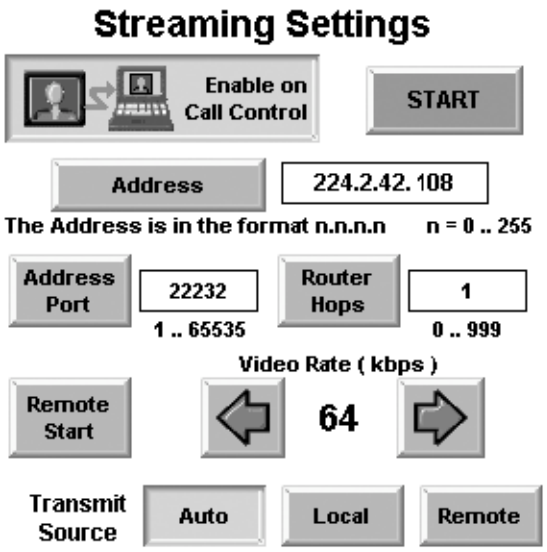
Buttons	Functions
NAT Router	Press to enable network address translation if the Codec is connected to a NAT router.
NAT Address	Press to enter the global/external IP address of the NAT router.

Gatekeeper & Routing Settings



Buttons	Function	
No	The Codec will not use a gatekeeper and an IP-address must be used in order to make an H.323 call.	
Auto	The Codec will automatically try to register on any available gatekeeper. If a gatekeeper responds to the request sent from the Codec within 30 seconds, this specific gatekeeper will be used. If no gatekeeper responds, the Codec will not use a gatekeeper for making H.323 calls and hence an IP-address must be manually specified.	
Manual	The Codec will use a specific gatekeeper specified using the '**Gatekeeper IP-address**'	
H323 Alias	This is the H323 address of the Codec. The H323 address is equivalent to a telephone number, sometimes combined with access codes. Valid characters are 0-9, * and #. Pressing the **H323 Alias** button allows access to numeric keypad, where an alias number can be entered. When using a gatekeeper, the Codec will send a message to the gatekeeper containing both H323 address and the system name of the Codec. The Codec will not register with the gatekeeper if the H323 alias is not set.	
Gatekeeper IP	This is the gatekeeper IP-address if you specify '**manual**'	
RSVP (Resource Reservation Protocal)	This can be enabled and disabled from the System Setup > Terminal Setup > Ethernet > Gatekeeper/Routing. RSVP guarantees IP bandwidth over supported Cisco networks; i.e. if you placed a 768K call, you will get 768K for the duration of the conference.	
IP Precedence	Press the **Change** button to select a routing path for the router when multiple paths are available.	
	• **Off:**	Disables routing
	• **Delay:**	Tells router to minimize the delay
	• **Cost:**	Tells the router to minimize the cost
	• **Reliability:**	Tells the router to maximize the reliability
	• **Throughput:**	Tells the router to maximize the throughput
IP TOS	Press the **Change** button to select a routing path for the router when multiple paths are available.	

Streaming



Buttons	Function
Enable on Call Control	This button allows you to enable streaming on the call Control/Status and Manual Dial pages.
Start	Streaming is started using Quick button "**Start**". To stop streaming, press the **Start** button again.
Address	The window next to the **Address** button displays the current IP address on the system, a streaming server or a multicast address. To change the IP address setting, press the **Address** button and enter the IP address on the keypad.
Address Port	The window next to the **Address Port** button displays the current Address Port. To change the address port setting, press the **Address Port** button. If several Codecs are streaming to the same IP address, different ports have to be used in order for the client to select which stream to receive. If the first Codec streams on port 2240 and the second Codec on port 2250, you have to specify which port to listen to. Video is transmitted on the specified port, audio is transmitted on the port number 4 above the specified video port.
Router Hops	This is used for streaming data to limit how many routers the data should pass before it is rejected. The window next to the **Router Hops** button displays the current setting. To change the number of hops setting, press the **Router Hops** button. If set to two, data will not traverse more than two router hops.
Remote Start	• **On:** Streaming can be started from external user interfaces like the Web and Telnet.
	• **Off:** Streaming can only be started via the Touch Panel. This will prevent activation of streaming using the Web or Telnet. Use the arrow key to select the desired video rate
Transmit Sources	• **Auto:** Streams whichever is speaking, the local or remote site.
	• **Local:** Streams the **local site** live source.
	• **Remote:** Streams the image from the **remote site**.

Restart

After any changes to the configuration, the **Restart** button must be activated for these changes to take effect.

Button	Functions
Restart	This button will reboot the Codec allowing the implemented changes to take effect. While this is happening the button will flash, during this time do not use the system.

Equipment Setup Page

The Equipment Setup page is the default page that appears when **SYSTEM SET UP** on the bezel is pressed. (The Equipment Setup page is active when the EQUIPMENT SETUP button is green.) A selected button goes from gray to green indicating that the source/option is active. When a source is selected, the box on the right of the screen displays any options that are available for that source.

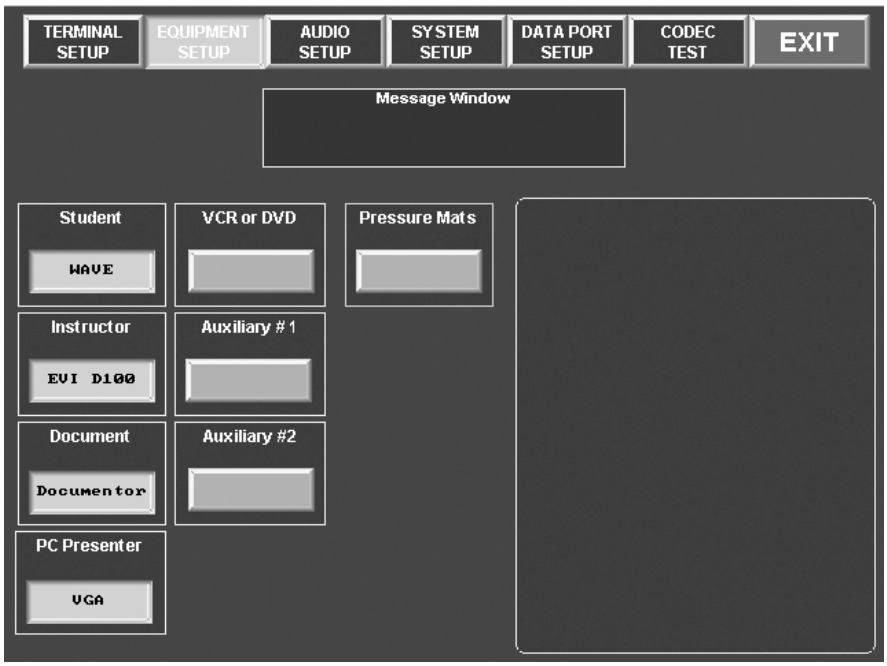


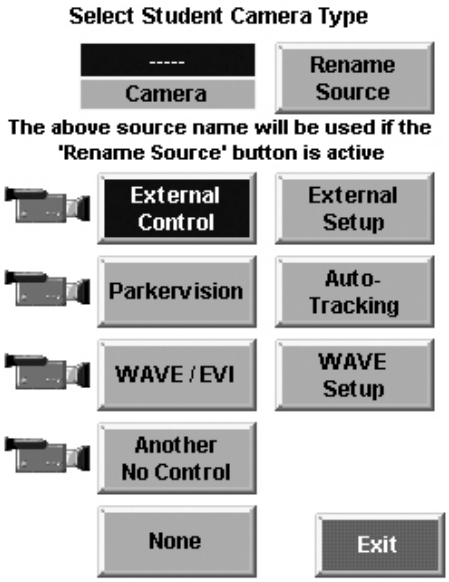
Figure 14

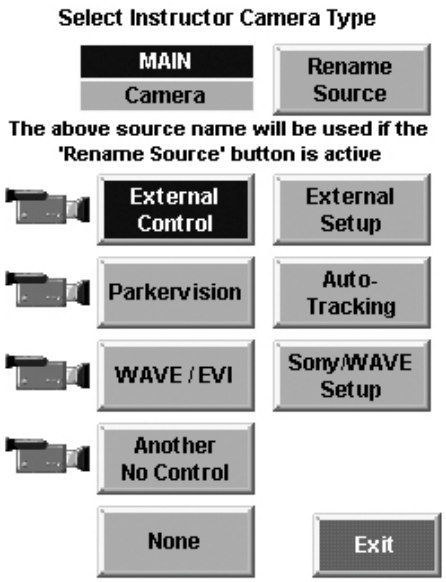
Equipment Setup Page

Buttons	Functions
Student Camera	Enables or disables as required. Enabled source appears in the Live Source panel on the Main Operating page and in the Full Screen Preview mode.
Instructor Camera	Enables or disables as required. Enabled source appears in the Live Source panel on the Main Operating page and in the Full Screen Preview mode.
Document Camera	Enables or disables as required. Enabled source appears in the Live Source panel on the Main Operating page and in the Full Screen Preview mode.
VCR or DVD	Enables or disables as required. Enabled source appears in the Live Source panel on the Main Operating page and in the Full Screen Preview mode.
Auxiliary #1	Enables or disables the source installed as **AUX 1**.
Auxiliary #2	Enables or disables the source installed as **AUX 2**.
PC Presenter **(Codec VGA In or VNC)**	Enables transmission of the Codec VGA input. ***Note**: Accepts VGA signal (640 x 480) or S-VGA (800 x 600) signal or X-VGA signal (1024 x 768).* *The PC Audio can be connected to **Audio Aux In 2**.*
Pressure Mat	You may set a video switch and/or camera movement for each of the five pressure mats.
Exit	Returns to the Main Operating page. This can take several seconds as the system is compiling the changes to the related equipment.

Student/Instructor Camera

Select the **Student Camera** or **Instructor Camera** button and a pop-up window appears in the right part of the screen (see figures below). Select and set the cameras here.





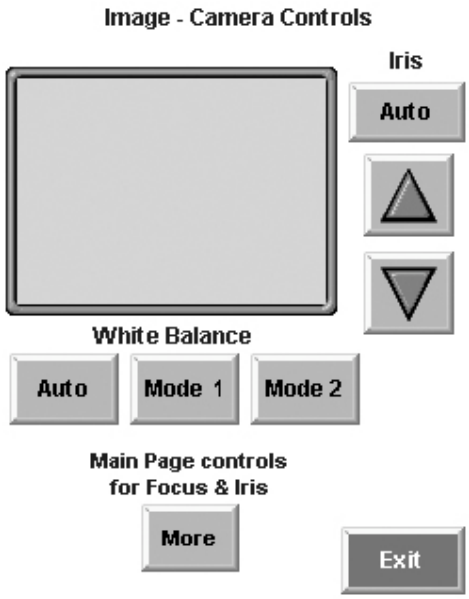
Buttons	Functions
Rename Source	Press **Rename Source** if you want to change the name of the camera, as it will appear on the Main Operating page. If the **Rename Source** button is active here, the Student/Instructor camera source will read **MAIN Camera**
External Control	Use when camera type not available in the Educator², is installed.
Parkervision	Fully controlled from the Touch Panel. Activate **Auto Tracking** button
TANDBERG WAVE/ Sony EVI-D30/31 Sony EVI-D100	Fully controlled from the Touch Panel. Set the camera's brightness (Iris), **White Balance** by pressing **Sony/Wave Setup**. Camera type is automatically detected.
Another No Control	Another camera can be used with the system but it will not have the Touch Panel control. The Touch Panel will only switch the video input source

To set up the **Instructor or Student Camera:**

1. On the Equipment Setup page, select **Instructor Camera** or **Student Camera**
2. On the Camera Type screen, select the camera type.
3. (Optional) Change the name of the camera button using **Rename Source.** If you do not change the name here, the camera source will be labeled as **Instructor Camera** or **Student Camera** on the Main Operating page. To change the name, press **Rename Source**. Type in the new name using the pop-up keypad. Press **Exit** when done.
4. Set the camera's brightness by pressing its accompanying control button (see the following sections).
5. Press **Exit**.

Sony/Wave Camera Setup (Student, Instructor)

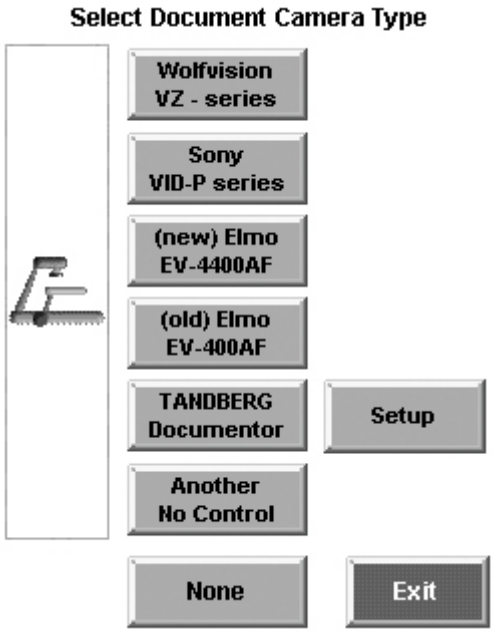
Use the camera controls to manually set the Iris / Gain setting of the Sony EVI-D30/31 camera. This feature allows you to de-activate the default Auto-Iris setting on the camera and manually set it for difficult situations; for example, where the foreground and background are illuminated differently.



Buttons	Functions	
Iris Arrow Down	• **Auto:** • **Arrow Up:** • **Arrow Down:**	Press to select the brightness setting
White Balance	• **Reliability:** • **Mode 1:** • **Mode 2:**	Press to select the white balance setting
More	Enables or disables the iris and focus control of the camera from the Main Operating page	
Exit	Closes the pop-up window and returns to the Equipment Setup page.	

Document Camera

Pressing the Document Camera button opens a pop-up window in the right part of the screen. Select a document camera. The choices are as follows:

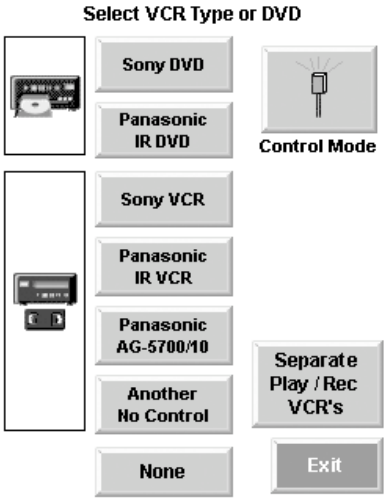


Buttons	Functions
Wolfvision VZ-series	Provides zoom, focus and iris controls.
Elmo EV-400AF	Provides zoom, focus, lighting and image controls.
Elmo EV-4400AF	Provides zoom, focus, lighting and image controls.
Sony P-110	Provides zoom, focus, lighting and image controls.
DC2000 Documentor	Provides Zoom and focus controls.
Another No Control	Does not have touch panel controls. The video output is made available to the system and any adjustments must be done using the controls on the camera.
None	No document camera installed

The name of the camera selected appears in the document camera button on the Main Operating page. Press **Setup** to make any adjustments. Press **Exit** to return to the Equipment Setup page.

VCR or DVD Player

Pressing the VCR or DVD button opens a pop-up window in the right part of the screen. Select the applicable VCR or DVD player.



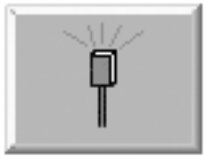
Device	Controls	
(DVD)	• **Sony DVD**	Touch panel provides play and transport controls.
	• **Panasonic IR DVD**	Touch panel provides play and transport controls.
(VCR)	• **Sony VCR**	Touch panel provides play, record and transport controls.
	• **Panasonic IR VCR**	Touch panel provides play, record and transport controls.
	• **Panasonic AG-5700/10**	Touch panel provides play, record and transport controls.
	• **Another No Control**	Does not have touch panel controls. The video output is made available to the system and any adjustments must be done using the controls on the device.
None	No VCR installed.	

Press **Separate Play/Rec VCRs** to indicate that there are two separate VCRs performing the playback and record functions. These VCRs, if controlled from the touch panel, can only be the **Sony or Panasonic model**.

Press **VCR/DVD control mode** to configure the Sony VCR or DVD control interface.

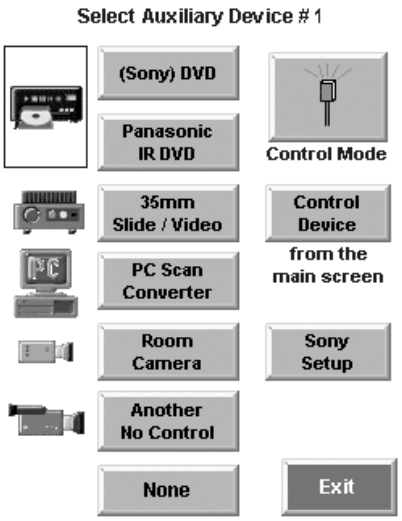
On the pop-up window select whether the Sony device you are using has a S-Link or IR control input.

Press **Exit** to return to the Equipment Setup page.



Auxiliary Device #1

Press the **Auxiliary Device #1** button to set the device attached to the **AUX#1** port. Select the applicable auxiliary device from the pop-up window in the right part of the screen. The choices are as they appear in the following screen.



Use the Device Control button that pops-up to the right of the source to access device's controls on the Main Operating page.

Press **VCR/DVD control mode** to configure the Sony VCR or DVD control interface.

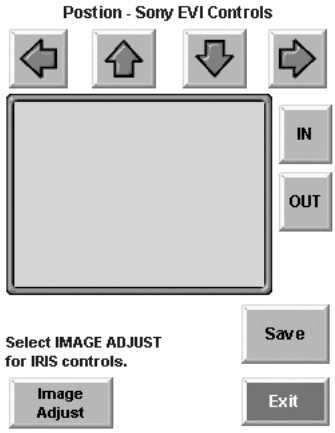
On the pop-up window select whether the Sony device you are using has a S-Link or IR control input.

Name	Model that can be controlled	
(DVD)	• **Sony DVD**	Sony DVP 300S
	• **Panasonic IR DVD**	Panasonic DVD-RV series
35mm Slide/Video	Elmo TRV-35H	
PC Scan Converter	Focus Tview Gold	
Room Camera	Sony EVI-D30/31	

Use the **Device Control** button that pops-up to the right of the source to access device's controls on the **Main Operating** page.

Press **VCR/DVD control mode** to configure the Sony VCR or DVD control interface.

On the pop-up window, select whether the Sony device you are using has a S-Link or an IR control input.

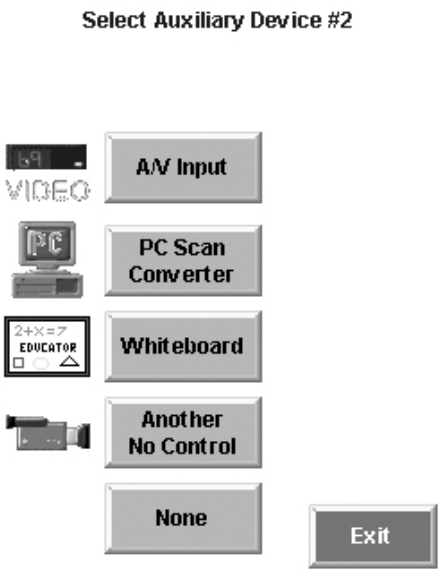


Room Camera Setup

Use the room camera positioning and zooming controls to set the room camera. Make the appropriate changes, then press **Save** to store the settings. This sets the power up location of the camera. Even if the camera settings are then changed, the camera will return to this position the next time it is powered ON.

Buttons	Functions
Arrows	Move the camera up, down, left and right.
IN	Zooms in (enlarges the view of the subject).
OUT	Zooms out (reduces the view of the subject).
Save	Stores the power up location of the document camera.
Image Adjust	Removes the pan left, right and zoom controls, and changes the text of the Save button to **Auto Iris**. The remaining up & down keys adjust the Iris / Gain setting of the camera and de-activate the Auto-Iris function. Select **Auto Iris** to cancel the previous iris setting and return the camera to the default Auto-Iris mode. Select **Image** a second time will display the setup shown above.
Exit	Closes this pop-up window and returns to the Equipment Setup page.

Auxiliary Device #2



Press the **Auxiliary Device #2** button to set the device attached to the **AUX#2** port. Select the applicable auxiliary device from the pop-up window in the right part of the screen. The choices are as they appear in the following screen.

The PC audio from the **PC Presenter** can also be connected to the **Audio Aux In 2**. This Audio function ONLY works when the **A/V Input** or **PC Scan Converter** button is not selected.

The icon to the left of the selected device is what will appear on the **Auxiliary #2** button on the Main Operating page

Pressure Mats Configuration

The Pressure Mats feature allows the system to switch to a preset and/or video source automatically. Press the **Pressure Mats** button on the **Equipment Setup** page to access this camera configuration. This page allows the pressure mats to be assigned to the main camera presets and/or the selection of the video sources such as document camera or PC Input.

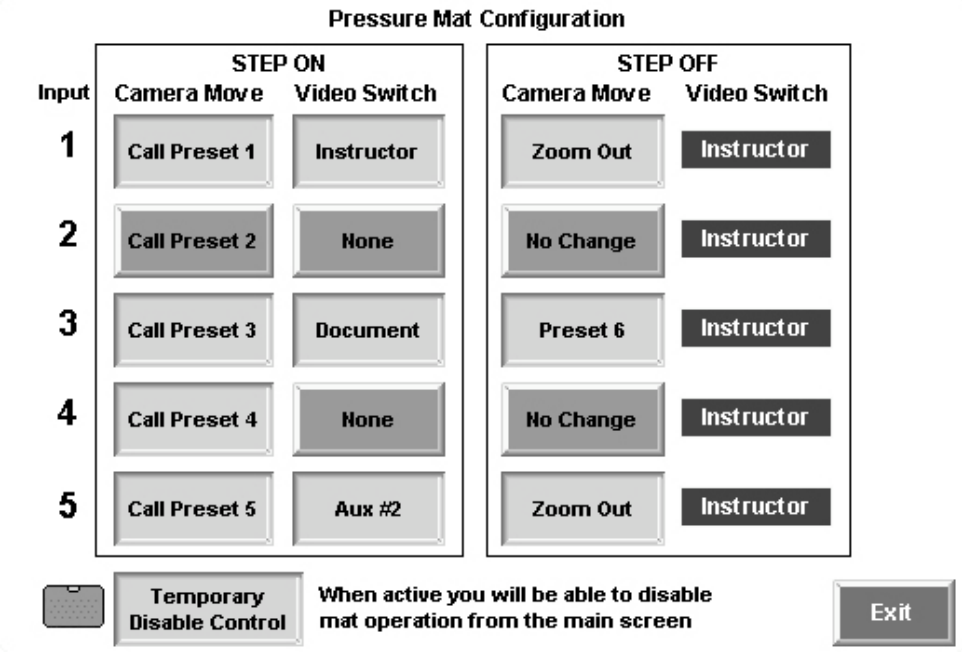
Buttons	Functions	
STEP ON	**Camera Move**	Press the **Call Preset 1-5** to activate the assigned main camera presets.
	Video Switch	Press to toggle through the desired video source that will be transmitted when selected.
STEP OFF	**Camera Move**	Set the action/source that will occur/display when stepping off the pressure mats.
	Video Switch	Indicates the video source that will be transmitted when the user steps off the pressure mat.
Temporary Disable Control	When activated, the user will be able to disable the operation of the mats temporarily from the **Main Page**.	

Example 1, See diagram:

When the Instructor steps on the pressure mat #1, the **Instructor Camera** will go to **Preset 1** and the also transmit the image of the **Instructor** since the **Video Switch** is selected. When the Instructor steps off the pressure mat, the instructor camera will go back to the prior setting and **zoom out** to a wider view.

Example 2, See diagram:

When the Instructor steps on the pressure mat #3, the **Instructor Camera** will go to **Preset 3** and the also transmit the image of the **Document** since the **Video Switch** is selected. When the Instructor steps off the pressure mat, the instructor camera will go back to the **Preset 6**.



Audio Setup Page

Press **AUDIO SETUP** on the Main System Setup page to display the Audio Setup page. Use this page to view and change the settings and levels for each audio input and output.

Telephone Add-on (North America only)

The Telephone Add-on feature allows the telephone caller to be brought into the videoconference call. Press the button on the Audio Setup page to make this option available. Once activated, this option will be accessible on the Live Sources panel of the Main Operating page and on the Call Status Control page.

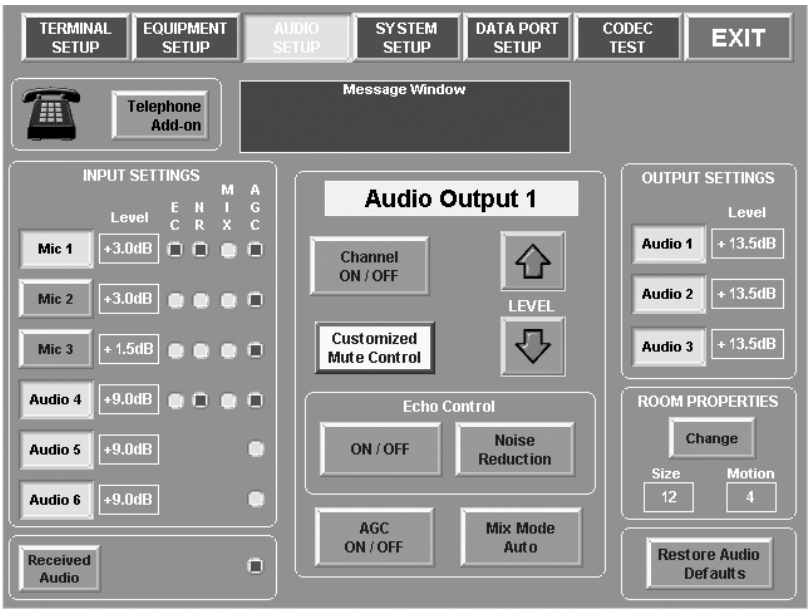


Figure 15 Audio Setup Page (with Input selected)

Button	Functions
Telephone Add-on	Enables and disables the Telephone Add-on option.

To make a telephone only call, dial the remote party using the Telephone Handset. Press the Telephone Add-on button to connect the call into the conference. The button will illuminate and the “Tel-Add” indicator will flash when the telephone party is connected. Press **Telephone Add-on** again to disconnect the call.

Audio Input Settings

	Level	E C	N R	M I X	A G C
Audio Source	**Audio Level**	**Echo Canceller**	**Noise Reduction**	**Mix Mode**	**Automatic Gain Control**
Select to configure that audio input. **Mic. 1** - Podium **Mic. 2** - AudioScience 1 **Mic. 3** - AudioScience 2 **Audio 4** - PTT Mixer **Audio 5** - Tel-add or Aux. **Audio 6** - VCR or DVD	Displays the corresponding audio input level in dB.	These lights indicate if the echo canceller is active for the audio input.	These lights indicate if the noise filter is active for the audio input.	These lights indicate if the input levels for the microphones and Audio 4 are automatically controlled. If the lights are off, the input levels are fixed (all active).	These lights indicate if the AGC is active for the audio input. Mic 1, 2, 3, and Audio 4 share the same AGC circuit. Audio 5, 6, and Received Audio have individual AGC circuits.

Note: Selecting a particular Audio Input causes that input’s setup window to appear in the center of the screen.

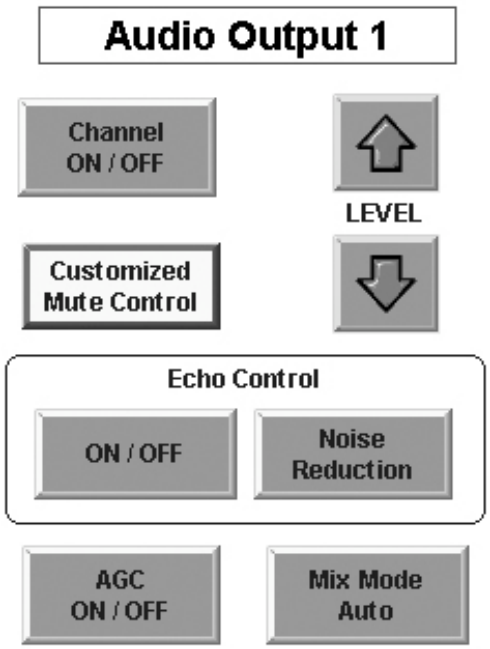
Audio Output Settings

Audio Output	Level
Select to configure that audio output. **Audio 1** - Room Loud Speakers **Audio 2** – Telephone Add-on **Audio 3** - VCR	Displays the corresponding audio level in dB.

Note: Selecting a particular Audio Output causes that output's setup window to appear in the center of the screen.

Input/Output Controls

Buttons	Functions
Text Window	Indicates what is being configured.
Level Up / Down	Adjusts the level of the audio input in 1.5 dB steps. The current value is displayed in the 'Level' window.
Channel On / Off	Activates or de-activates that audio input.
Customized Mute Control	Press to activate or de-activate the audio input as a custom mute. If any microphone audio inputs is enabled, the **Customized Mute Control** will be displayed on the Main Operating page replacing the **Date** button.
Echo Control	Activates or de-activates that audio input's echo canceller.
Noise Reduction	Activates or de-activates that audio input's echo canceller with low frequency noise filter.
AGC On / Off	Activates or de-activates that audio input's automatic-gain-control. Mic 1, 2, 3, and Audio 4 share the same AGC circuit. Audio 5, 6 and Received Audio have individual AGC circuits.
Mix Mode Auto	Toggles the mix mode ON and OFF. When set to ON, the input levels of Mic 1, 2, 3, and Audio 4 are automatically controlled. To reduce background noise, microphones that are not picking up the current speaker will have their input levels lowered. When the mix mode is OFF, all four inputs are constantly active.



Room Properties

The Room Properties feature allows you to set the optimization of the echo canceller to the acoustic size of the room. Hard walls, many windows etc. might require higher settings than expected. Carpets, curtains etc. might require a lower setting. Adjust the setting if one of the following symptoms occurs at the far end or remote site:

Size of the Room

- There is still echo of your own audio. Press the **Change** button of the **ROOM PROPERTIES** window. In the popup window, use the **up arrow key** to increase the value.
- The system adapts slowly to the acoustic changes in the room. Press the **Change** button of the **ROOM PROPERTIES** window. In the popup window use the **down arrow key** to decrease the value.

Motion within the Room

- If you experience echo caused by motion.

Press the **Change** button of the **ROOM PROPERTIES** window. In the popup window, use the **up arrow key** to increase the value.

Restore Audio Defaults

This button resets all the audio inputs and outputs to the Codec default conditions, which are:

- All audio inputs - **On**
- All echo cancellers (EC) - **On**
- Noise Reduction (NR) - **On**
- Mix Mode (Mix) - **On**
- All system Automatic Gain Control (AGC) circuits - **On**
- The microphone level settings to **+3dB**
- The audio inputs 4 to 6 settings to **+9dB**
- All audio outputs are active and set to **+13.5 dB**
- Room properties default; size **12** and motion **0**

System Setup Page

Press **System Setup** on the System Setup Main page to access features that enable the password protection option, configure the touch panel video window and set a name for the video site.

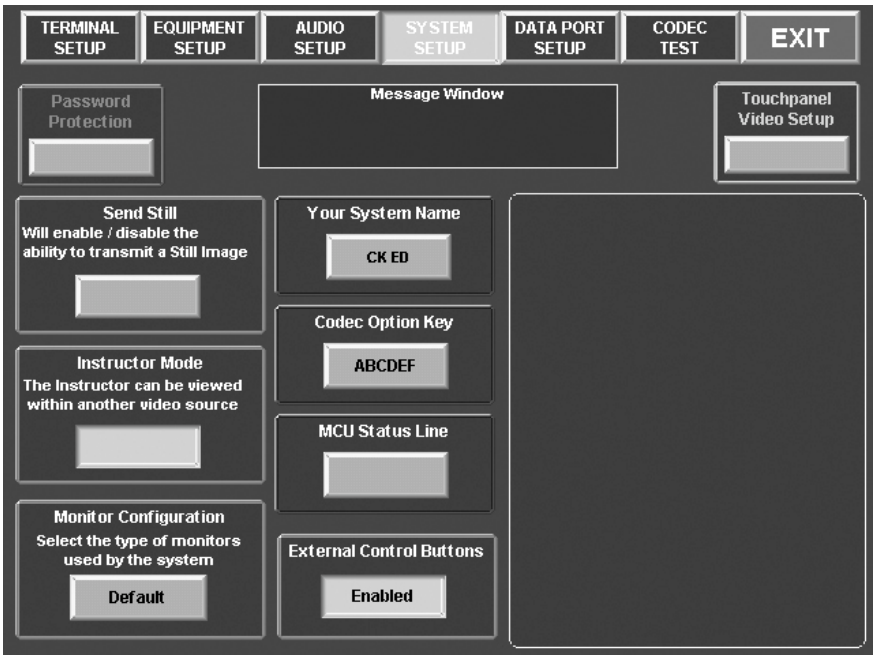
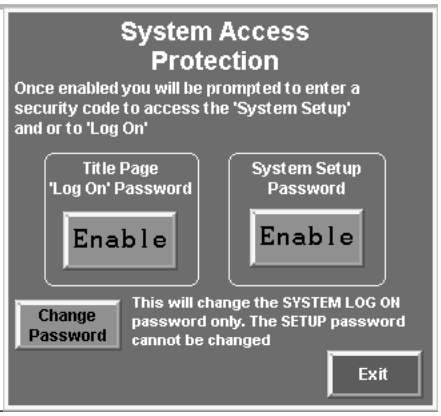


Figure 16

System Setup Page

Buttons	Functions
Password Protection	Press to enable or disable password protection options. Enabling the 'System Setup' password will require the user to enter a password to gain access to the System Setup. The password to enter the system set up is **4281**, and it cannot be changed. Enabling the 'Title Page Log On' password will require the user to enter a password during the system start up to access the main touch panel controls. This password can be changed by pressing the Change Password button. The default password is 1234. The system administrator password is 8897440.
Touch Panel Video Setup	Configures the touch panel video window; with respect to, image controls and video input standards.
System Name	Press to name your Educator² system using a pop-up key pad (max. 11 characters).
Instructor Mode	When the system is configured for Instructor Mode, the live source is transmitted with an inserted image of the instructor camera. This allows the remote site to see the presentation and the instructor simultaneously. Press the Instructor Mode button to enable the Instructor Mode feature. Press the Instructor Mode button again to disable the Instructor Mode feature. **Note:** To setup the instructor camera, see *Student/Instructor Camera* section.
Option Key	The option key is used to configure the Codec software options such as MultiSite or Presenter functionality. However, the system requires a valid option key password* to activate MultiSite and/or Presenter functionality. Press the **Option Key** button and enter the valid password on the popup keyboard and press **Enter**. Press **Cancel** to abandon the operation. **Note**: A restart of the system is required after entering a new option key. If the option key password is invalid, the original key setting will be used.
Send Still	Enables the Send Still Image option.
MCU Status Line	Enable to on screen MCU call information.
External Control	Enables and configures the External Control buttons.
Monitor Configuration	Configures the type of monitor used in the system.
Exit	Returns to the Main Operating page. This can take several seconds as the system is communicating any changes to the related equipment.

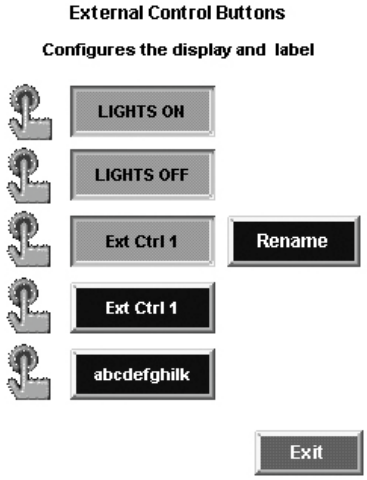

System Access Protection
Once enabled you will be prompted to enter a security code to access the 'System Setup' and or to 'Log On'
Title Page 'Log On' Password
Enable
System Setup Password
Enable
Change Password
This will change the SYSTEM LOG ON password only. The SETUP password cannot be changed
Exit

** See your TANDBERG Representative for more details.*

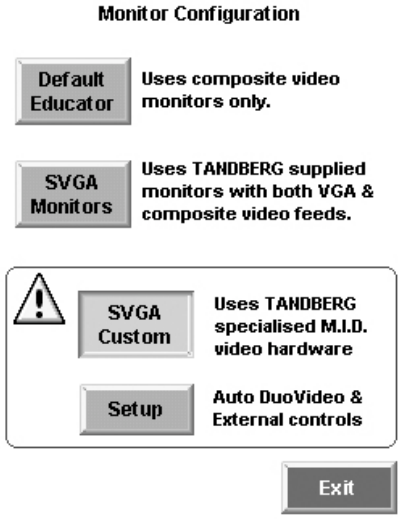
External Control

External Control uses the AUX 2 data port on the TAM interface to transmit control strings to another control system where they are interpreted and their functions are performed.

Press **External Control** on the System Setup page. Enable and configure up to five External buttons on the pop-up window. Selecting the left-hand button will enable the External button on the Main Operating page (accessed using the More buttons under the Live Sources panel.) Press this button again to de-activate it but not affect the text stored within.



Monitor Configuration



Buttons	Functions
Default Educator	Select this mode when the system is connected to composite video monitors only. This is the default setting for the Educator system.
SVGA Monitors	Select this mode when the system is connected to TANDBERG supplied composite and SVGA switchable monitors. **Note.** The supplied monitors are equipped with TANDBERD MIB (monitor interface box) and custom cabling.
SVGA Custom	Select this mode when the Educator is installed with TANDBERG MID (multi image display) hardware. When enabled an additional 'setup' button appears allowing configuration of the MID system. A separate document describes MID system operation.

Data Port Setup Page

Press **DATA PORT SETUP** to display the Data Port Setup page. Use this page to configure the Codec Net #1, RS232 data port. When a button is illuminated, that setting is active.

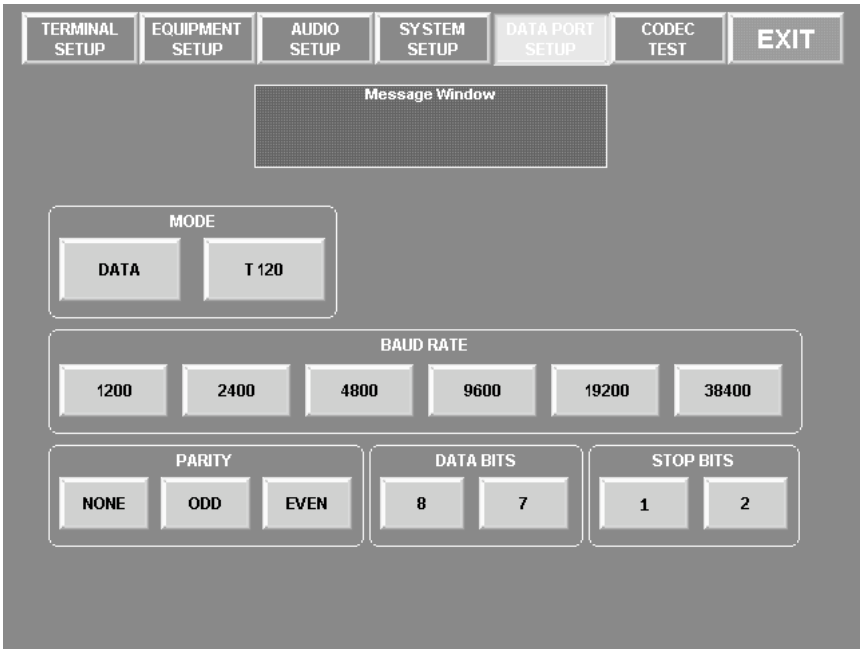


Figure 17 Data Port Setup Page

Data Mode

This mode provides a transparent data channel. This channel can be used for many different purposes such as file transfer, and application sharing. When using this mode, it is necessary to have a TANDBERG system at the remote site.

Buttons	Functions
DATA / T120	Press on one of these buttons to select data mode or T120.
1200...38400	Press on one of these buttons to select the baud rate.
None/odd/even	Press on one of these buttons to select the parity setting.
8/7	Press on one of these buttons to select the number of data bits.
1/2	Press on one of these buttons to select the number of stop bits.
Exit	Returns to the Main Operating page. This can take several seconds as the system is communicating any changes to the related equipment.

T120 Mode

This mode provides a data channel that supports the T.120 standard for data communications. Using T.120 software such as Microsoft NetMeeting on a local PC, the user can communicate with other T.120 systems via the Educator².

Codec Test Page

Press **CODEC TEST** on the System Setup Main page to display the Codec Test page.

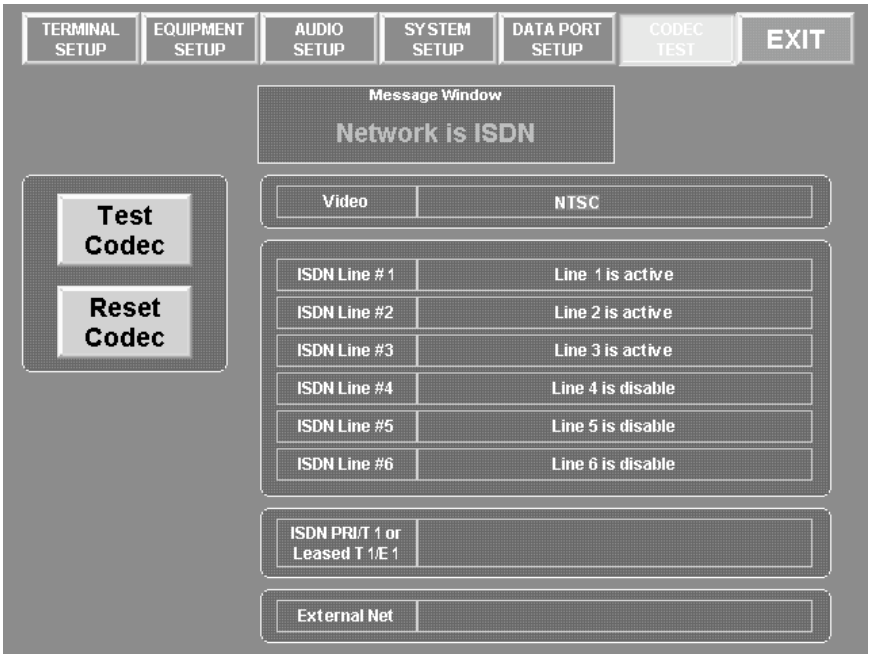


Figure 18 Codec Test Page

Buttons	Function
Test Codec	Starts testing the Codec. As the test proceeds, report lines are written for each item in the test list. Contact technical support if you cannot solve the problem.
Reset Codec	Resets the Codec. This performs a reboot with information displayed on the local monitor displays. The button flashes while resetting is being performed.
Exit	Returns to the Main Operating page. This can take several seconds as the system is communicating any changes to the related equipment.

Abbreviations

AGC	Automatic Gain Control
Aux	Auxiliary
BRI	Basic Rate Interface
Codec	Compression decompression
CSU	Channel Service Unit
DVD	Digital Versatile (Video) Disc
EC	Echo Canceller
ETSI	European Telecommunications Standards Institute
HF	Hum Filter
IMUX	Inverse Multiplexer
ISDN	Integrated Systems Digital Network
Mic	Microphone
MSN	Multi Subscriber Network
PC	Personal Computer
PRI	Primary Rate Interface
TNT	Touch and Talk
SPID	Service Provider Identification
TAM	TANDBERG Applications Module
VGA	Video Graphics Array

Appendix 1:

AudioScience Microphone

AudioScience Microphone Parts Listing

Before proceeding, please ensure that the following list of parts was received with your new AudioScience Microphone package. If any part is missing or damaged, contact your TANDBERG Representative to arrange for a replacement.

Qty	Part Description	Present?
1	**Acrylic Top Deflector Fitted With Microphone Assembly**	
1	Rear Deflector	
4	Cable Suspension Assemblies	
2	Safety Cable Assemblies	
4	9/16” Ceiling Track Clips	
4	15/16” Ceiling Track Clips	
2	1/4 Universal Snap Hooks	
1	47' Plenum Rated Microphone Cable Assembly	
6	Nylon Washers	
6	Shoulder Screws	
10	White Cable Ties	
1	20 Foot Length of “Bailing” Wire	
1	Bottle of Brillianize Plastics Cleaner	
1	Sofkloth Towel	
1	Assembly and Installation Instructions	

Tools Required for Assembly and Installation

- Step ladder (To suit ceiling height)
- #1 Phillips Screwdriver
- Wire cutter
- Knife or other tool to notch the ceiling tiles
- Any tools required to snake cable through the wall (if desired)

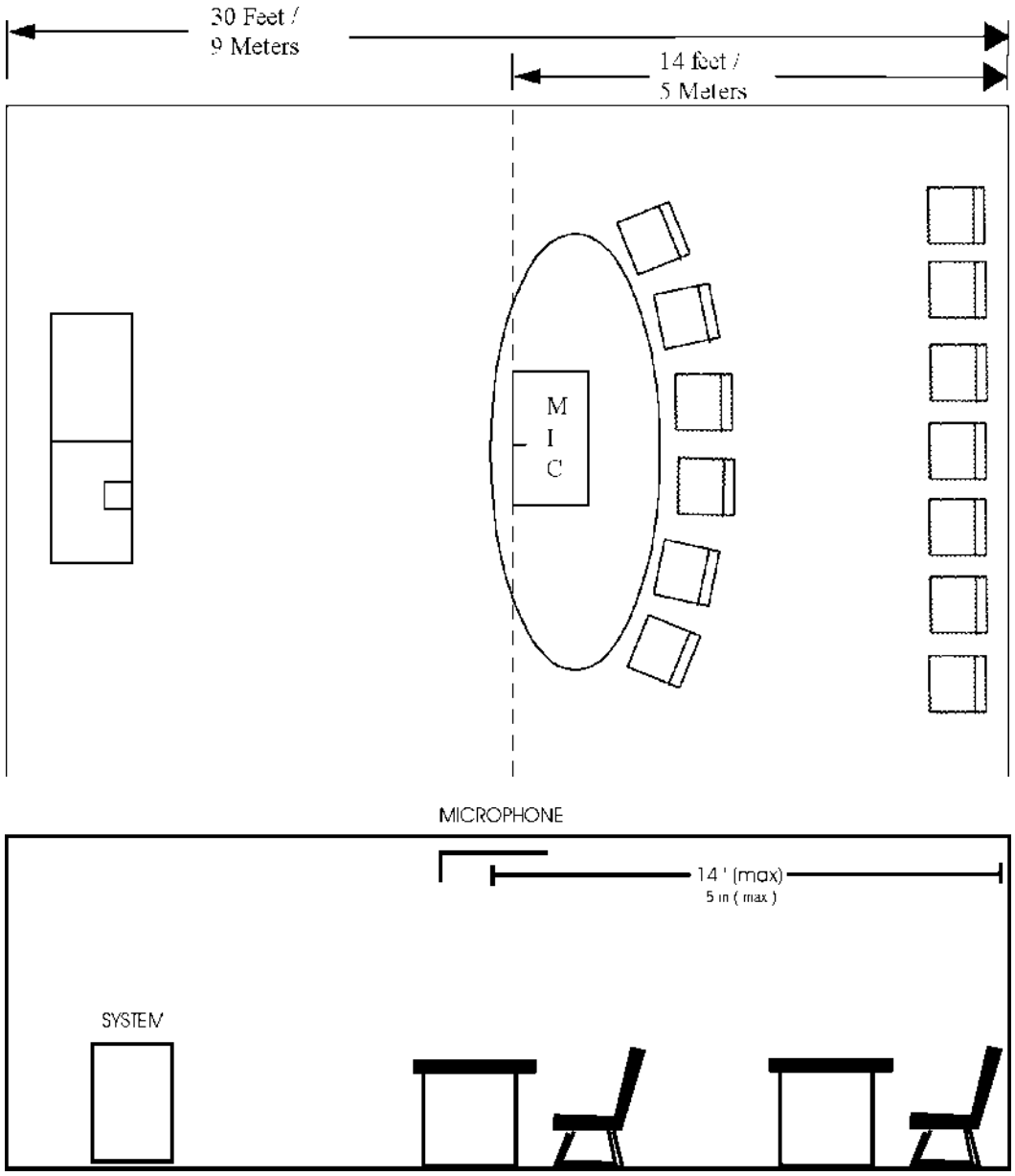
Installation Considerations

1. The standard hardware included with the microphone is intended to be clipped to ceiling tracks with the standard inverted “T” shaped cross-section, and with the horizontal part of that “T” to be either 9/16” (14 mm) or 15/16” (24 mm) in width. Ceilings which are not of this design need to have a secure anchoring installed in the ceiling to hang the microphone.
2. The standard cable included with the microphone is 47 feet (14 meters) long and plenum rated to comply with fire code regulations. This allows the microphone to be mounted up to about 30 “ceiling feet” (9 meters) away from the system. If the microphone is mounted further away, additional cable needs to be ordered. This cable is available in several standard lengths and can be ordered from your local TANDBERG Representative.
3. The microphone assembly has a pickup range of about 14 feet (5 meters). This means that all seating positions should be within this range of the microphone capsule. If there are substantial numbers of desired seating positions outside this area, then additional microphones may need to be installed.
4. The microphone cable should be routed from the microphone on the ceiling to the system on the floor in an aesthetic manner, such as within a conduit or wall “punch-out”.
5. The AudioScience microphone is currently limited for use on the TANDBERG Educator and other approved systems. Other applications will be documented, as they become available.

Selecting a Mounting Location

The mounting location of the AudioScience microphone can be determined through the application of three principles:

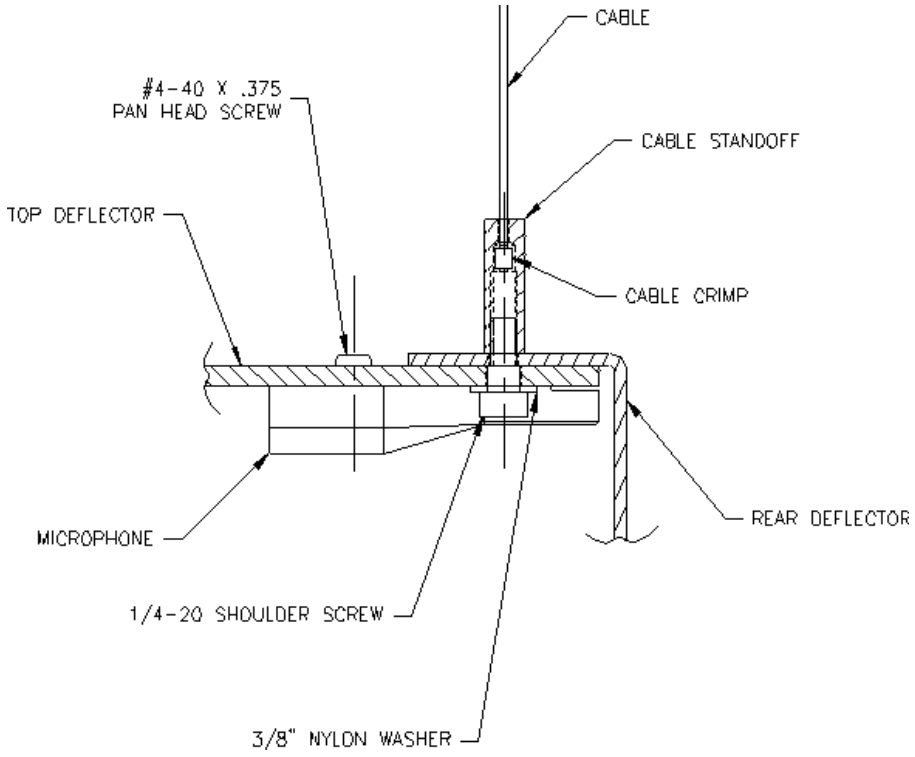
1. All desirable seating positions should be within 14 feet (5 meters) of the microphone capsule, with an unobstructed line of sight to the microphone capsule.
2. All undesirable noise sources should be blocked from reaching the microphone capsule by one or both boundaries of the microphone.
3. The mounting holes of the microphone boundary must be directly under a ceiling track to allow for mounting hardware. Additionally, to allow for easier changing of lighting tubes or bulbs, the microphone should not be mounted where the microphone blocks these items. If, due to acoustic concerns, a light fixture has to be "blocked" then string the microphone cable in such a way as to allow for removal of the microphone when light bulbs or tubes need to be changed.



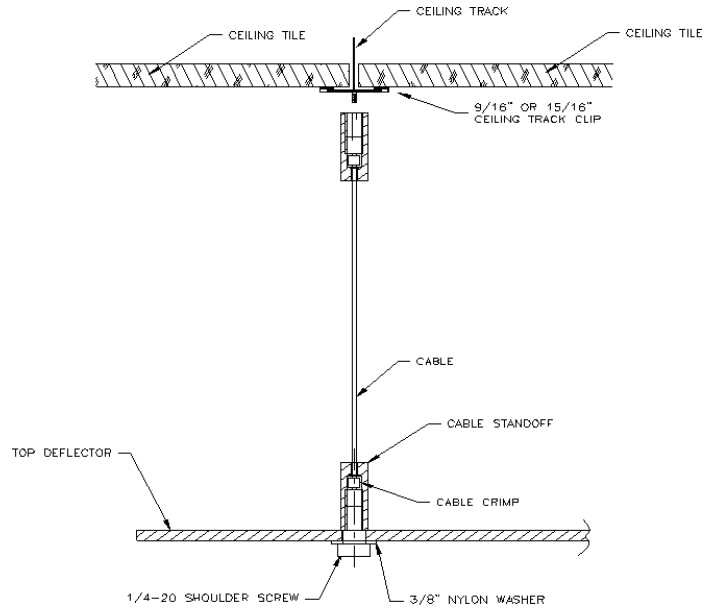
Typical Room Mounting Arrangement

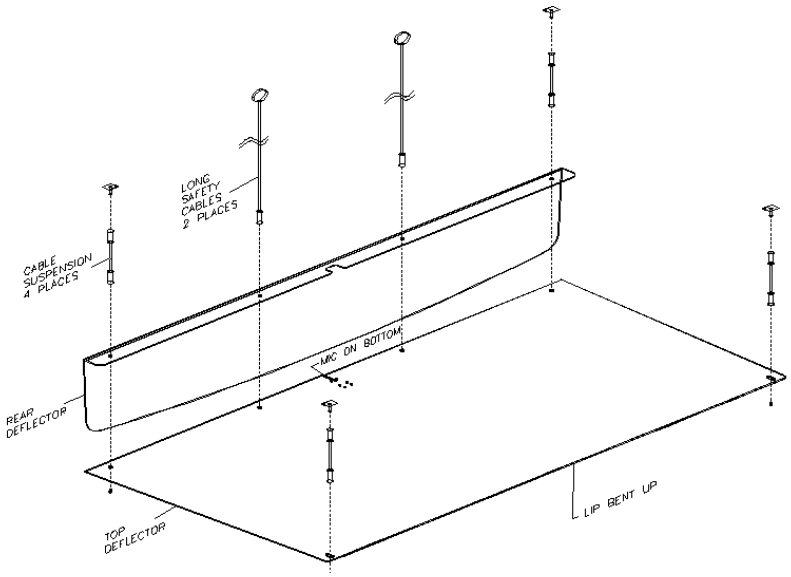
Assembly and Installation Instructions

1. Read the “Installation Considerations” on page 56 and proceed after all considerations have been understood and satisfied.
2. Read the guidelines for “Selecting a Mounting Location” on page 57 and select a mounting location.
3. Determine if the ceiling tracks are 9/16” (14 mm) wide or 15/16” (24 mm) wide. Eight ceiling track clips have been included. Four are for 9/16” ceiling tracks, and four are for 15/16” (24 mm) ceiling tracks. Discard the four that are not required.
4. Attach the ceiling clips to the ceiling grid. Attaching the ceiling clip requires a twisting motion while applying upward pressure on the clip. Adjoining ceiling tiles may need to be pushed up to fully attach the ceiling clip. Place the clips in positions to match the location of the AudioScience microphone’s mounting holes at each corner of the top deflector.
5. Remove the protective paper from all surfaces of the top and rear deflectors.
6. Attach the rear deflector to the top deflector using the two cable suspension assemblies at the outer mounting holes, and two of both the shoulder screws and Nylon washers. Tighten the shoulder screws to be “finger-tight.” In the same manner, attach the two remaining cable suspension assemblies to the opposite corner mounting holes of the top deflector.
7. With the assistance of another person, attach the AudioScience microphone assembly to the ceiling. This is done by supporting the acrylic structure while the cable suspension assemblies are threaded onto the ceiling clips.



8. Attach the two safety cables to the AudioScience microphone, and connect them to solid anchoring points in the ceiling. *Do Not* attach the safety cables to electrical or other wiring. (The _” universal snap hooks and the bailing wire may be used to achieve this.) Allow enough slack to let the ceiling tiles slide into place, but not enough to allow the microphone unit to hit anyone in the case of ceiling track failure.





9. Push back the ceiling tiles located directly above the microphone unit. Route the microphone cable up from the hole in the top deflector, along one of the safety cables, to the ceiling. Use the supplied cable ties to attach the microphone cable to the safety cable.
10. Plug the 47' microphone cable assembly into the XLR connector connected to the microphone capsule. Route the cable across the ceiling and down a wall located near the Videoconferencing system. If the cable is to be installed in a wall, a "fish tape" or conduit may be necessary to get the cable from the ceiling to the floor.
11. Replace the ceiling tiles. Small notches may need to be cut in the ceiling tiles to allow for the microphone cable and safety cables.
12. Using the Brillianize plastic cleaner, and the Sofkloth towel, wipe clean the plastic surfaces of the AudioScience microphone. The microphone is now ready for use.

Appendix 2:

The Tracker

The Tracker is a hand held Infrared transmitter that allows user to request the student camera to focus on their location.

Each Tracker has a specific Student camera preset allocated to it and hence the Tracker must be used from the location the camera preset will focus on.

The Tracker has two buttons, one for requesting to view the individual (single person) the other viewing a group or the wide-angle room view (three people).

The Tracker must be pointed towards the student camera for correct operation.

To set the Tracker address a rotary dial switch within the unit must be configured.

- Remove the battery cover on the underside of the Tracker.
- The switch has an arrow design to show it's current setting. Using a small flat bladed screwdriver rotate clockwise the switch until the required setting is selected.

The relationship between Student camera presets and Tracker switch settings are as follows.

NB. Tracker settings 0.1.F will not function correctly.

Switch Setting	= Preset	= Preset	Switch Setting	= Preset	= Preset
0	N/A	N/A	8	8	1
1	N/A	N/A	9	9	1
2	2	1	A	10	1
3	3	1	B	11	1
4	4	1	C	12	1
5	5	1	D	13	1
6	6	1	E	14	1
7	7	1	F	N/A	N/A

Appendix 3:

Installation and Setup, Educator/Tutor Extended Height Cart (EHC-03) and Monitor Interface Box (MIB)

Introduction

This document will explain how to install and connect the Monitor Interface Box (MIB) to the Educator or Tutor system using version 3 Extended Height Carts (EHC-03).

The EHC-03 is equipped with one acrylic shelf positioned at the highest point within the cart. This allows the bottom portion of the cart to be used for a cabinet enclosure or an additional shelf.

The following states the main differences with this system setup as compared to the current Educator or Tutor system:

- New style monitor carts EHC-03
- RS232 controlled monitors
- Monitor Interface Box providing interface between TAM and monitor for control, audio equalization and cable breakout point
- True SVGA monitor for local and duo video PC presentations on local/Dual monitor
- Uses audio from monitor speakers via MIB audio equalization circuit

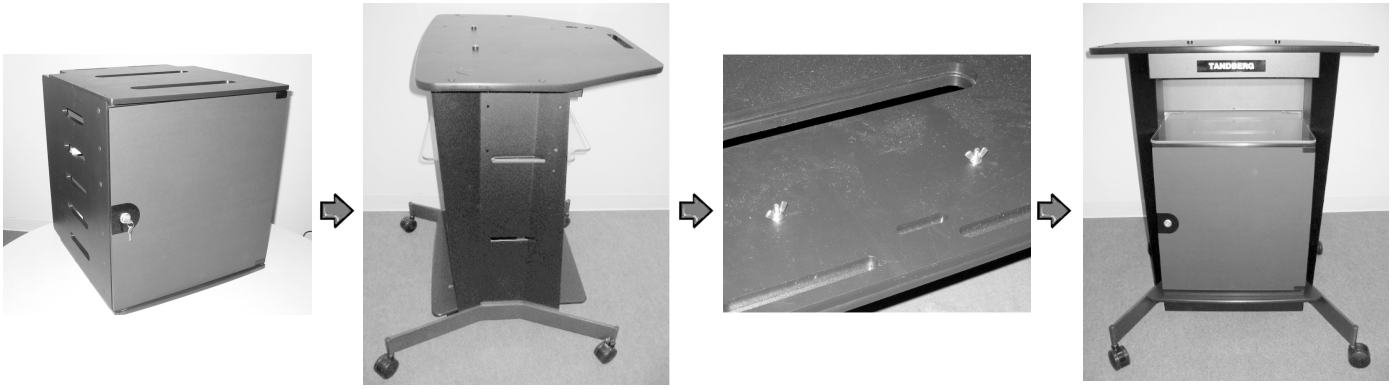
Monitor and Cart Installation

1. Unpack Extended Height Carts, equipment cabinet enclosure/s and monitors.
2. Install and fasten monitors on carts using the instructions supplied with TANDBERG monitors.
3. Locate, unpack and install the monitor RS232 printed circuit boards following the instructions supplied with the cards. One card per monitor is required.
4. Install cabinet enclosure/s within bottom of the cart/s inserting the enclosure from the rear of the cart (refer to images below).

   Note: Inserting the cabinet enclosure from the front of the cart may cause scratches to the bottom shelf which may be visible. Only one cabinet enclosure is supplied per system unless optional cabinet enclosures were ordered.

5. Align the vent slots of the cabinet enclosure with the vent slots of the cart and fasten the cabinet with the supplied hardware (refer to images below).

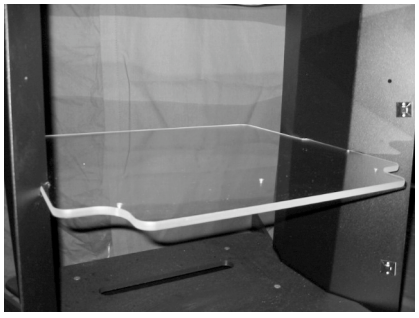
   Note: The cabinet enclosure can be rotated 180°, which allows door to swing open from opposite side. The rear door can also be rotated allowing keyed lock to be located at top.

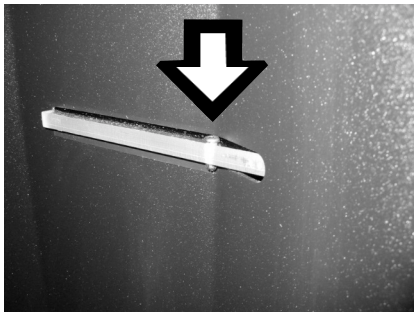


6. If system has only one cabinet enclosure, it is recommended that this cart be located at the left side of the second monitor cart. It is also recommended that the camera be placed onto the monitor cart with the cabinet enclosure.

Optional Acrylic Shelf Installation

1. Locate and unpack the Acrylic Shelf.
2. From the rear of the cart, slide the shelf into the available grooves as forward as possible (refer to images below). Verify with existing shelf for accurate positioning.
3. Insert the shelf retaining pins to lock shelf. One pin per side is required (refer to images below).





Monitor Interface Box (MIB) Installation

1. Locate and unpack the MIB. One MIB is required for the two student monitor carts and an additional MIB for the instructor monitor cart.
2. Install the MIB using the supplied bracket and screws to the rear of the cart (refer to images below).

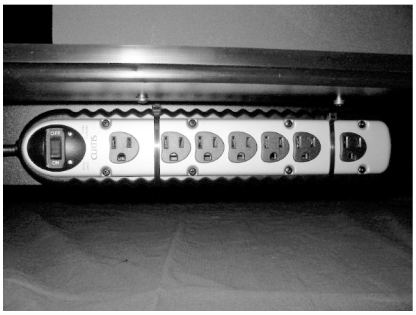
TAM Installation

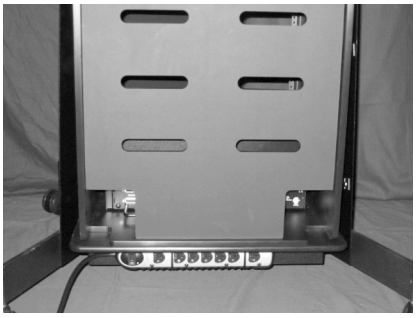
1. Locate and unpack the Tandberg Applications Module (TAM).
2. Install the TAM unit within the bottom of the cabinet enclosure.
3. Fasten TAM with the supplied screws.

Power Bar Installation

1. Locate and unpack the power bar/s. One power bar is supplied with the Tutor Student system and two power bars are supplied with the Tutor Teaching or Educator system.
2. Install the power bar to the bottom rear of the cart. Insert the supplied long tie wraps within the holes on the cart and around the power bars. (refer to image below)

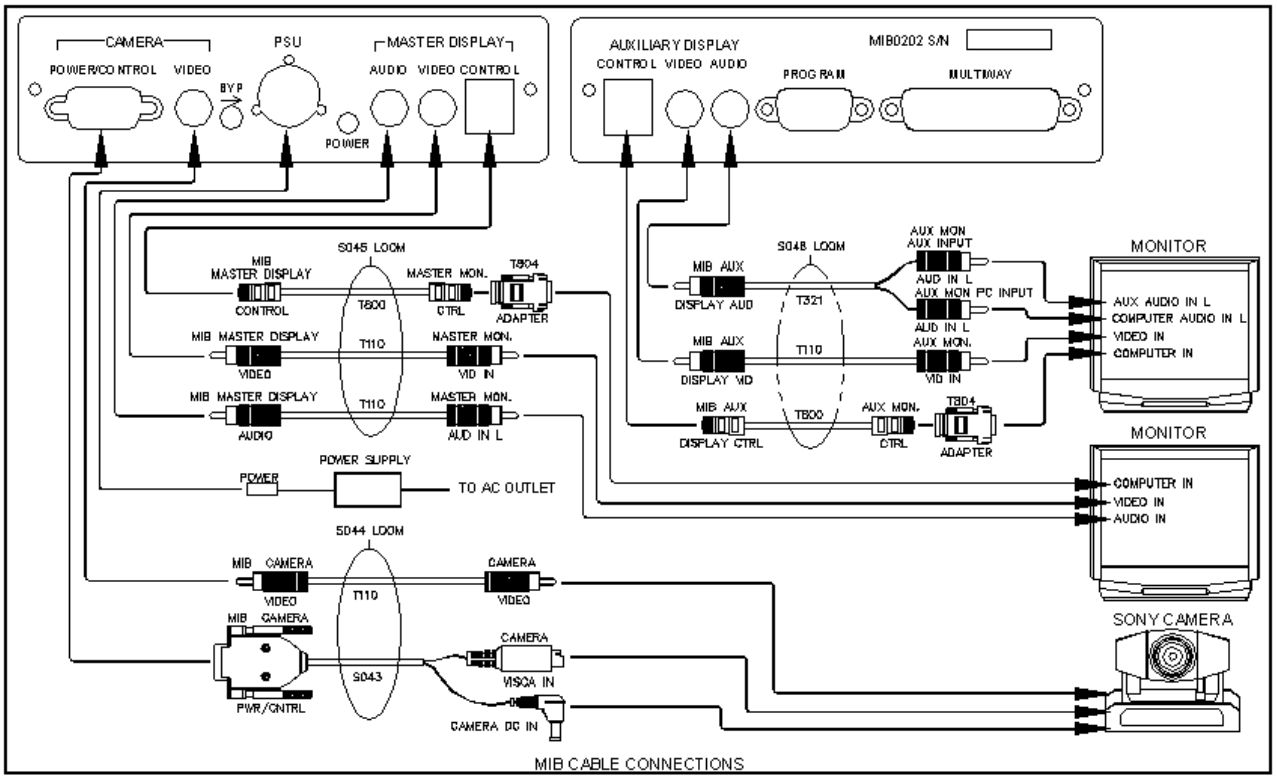
Note: One power bar is required for the two Student monitor carts and one power bar for the rear Instructor monitor cart. For the Student monitor carts it is recommended to install the power bar on the cart containing the electronic within the cabinet enclosure.



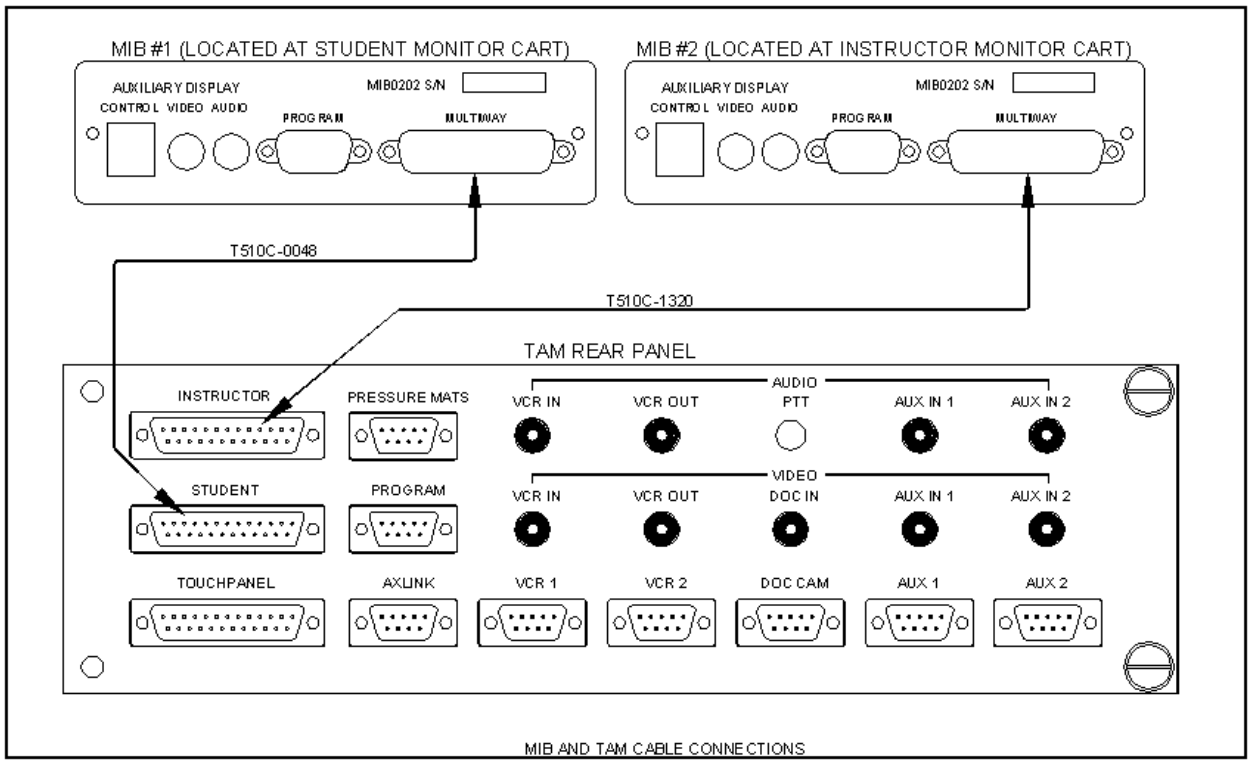


Connecting the MIB

1. Connect the cables S044, S045, and S046 as per diagram below. If system is equipped with an instructor monitor cart cable S046 is not required.
2. Verify the audio bypass (BYP) switch is set in the opposite direction from the arrow.



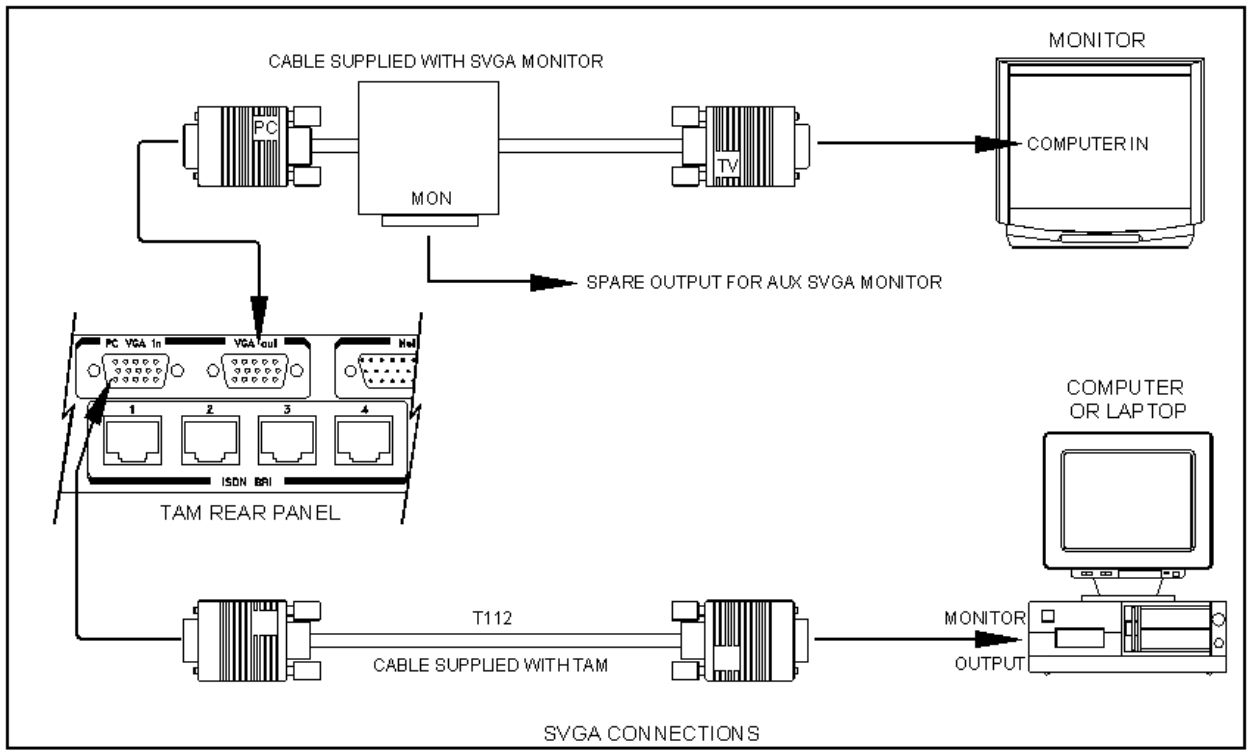
3. Connect cable/s T510C as shown in diagram below. If system is not equipped with an Instructor monitor cart omit the T510C-1320 cable connection.



MIB AND TAM CABLE CONNECTIONS

SVGA Connections

1. Connect the VGA cables as per diagram below.

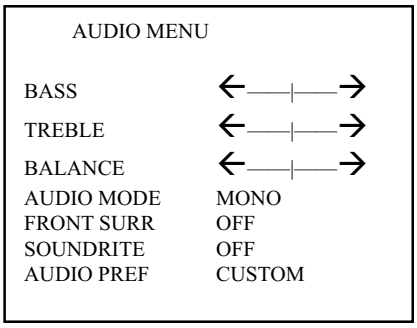


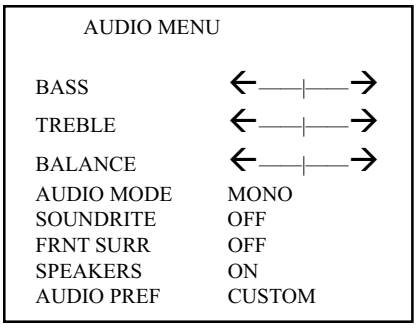
SVGA CONNECTIONS

Monitor Setup

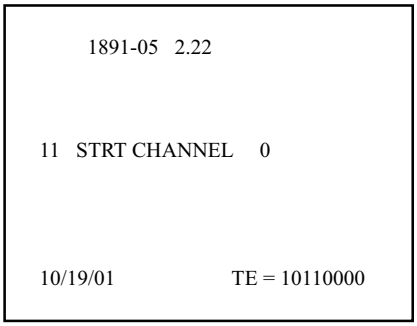
Before continuing with this section make sure the system is completely connected and AC power can be applied. Once AC power is applied press SYSTEM ON (green button) located on the Touch Panel. At this point the monitors should have powered on.

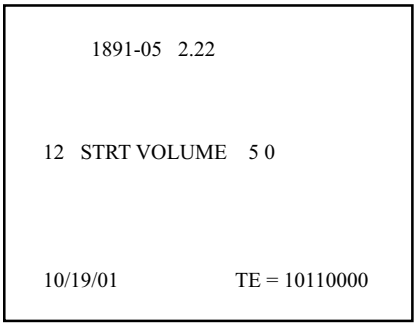
1. Using the monitor infrared remote press the menu key until the following display appears and adjust settings as per images.



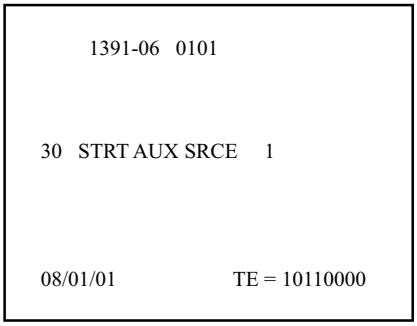


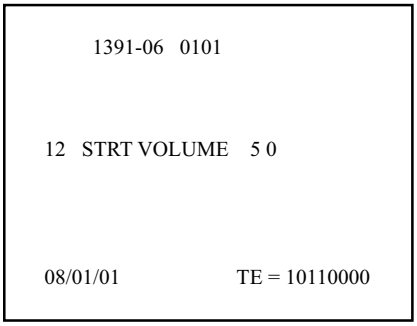
2. Accessing the installer's menu using the remote, press and hold menu (about 8 seconds) until the display changes, then press 9,8,7,6, then enter.
3. The Installers menu opens with item 03,POWER MANAGE for the video monitors and 04, VERT POS for the SVGA monitors. Press the up arrow key to sequence through the various items.
4. Set the video monitor/s as shown below using the left/right arrow keys to change the settings. Only items 11 and 12 require changes.





5. Set the SVGA monitor/s as shown below using the left/right arrow keys to change the settings. Only items 12 and 30 require changes.



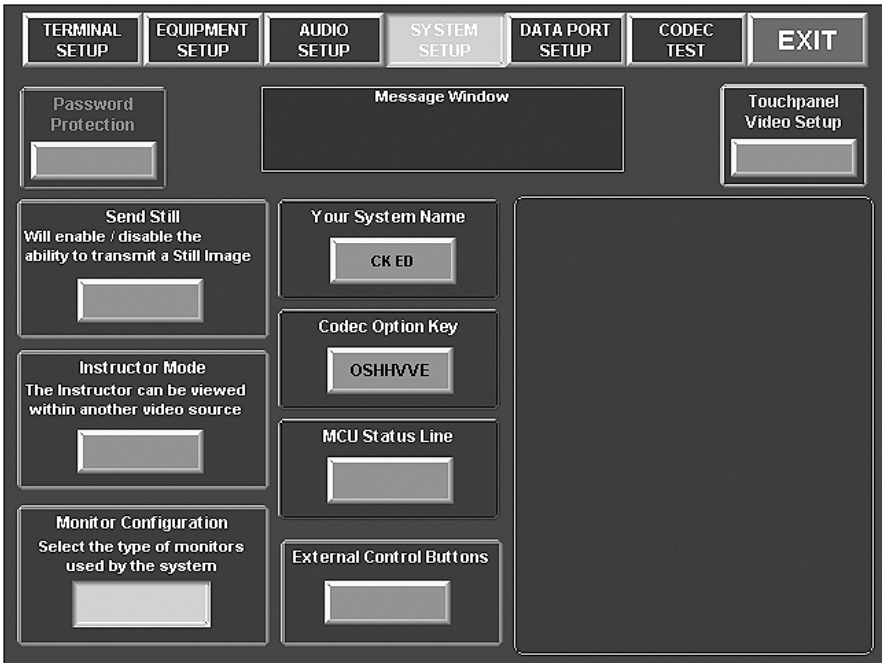


6. Once complete press ENTER to exit the installer's menu and changes will be saved to nonvolatile memory.

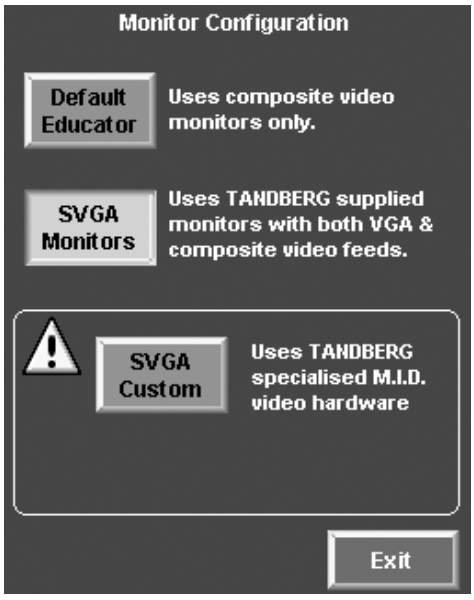
Refer to monitor user/installation guide for further information.

Touch Panel Setup

1. Press and hold the Touch Panel external System Setup button for about 3 seconds.
2. Next, press the System Setup button and the following page will appear



3. Press the Monitor Configuration button and the following popup page will appear to the far right of the screen.



4. Activate the SVGA Monitors button as shown above and press Exit. When complete with the setup section then press the EXIT button to the top right hand corner and the system is ready.

Refer to the Educator/Tutor user/Installation manual for other system functionality.